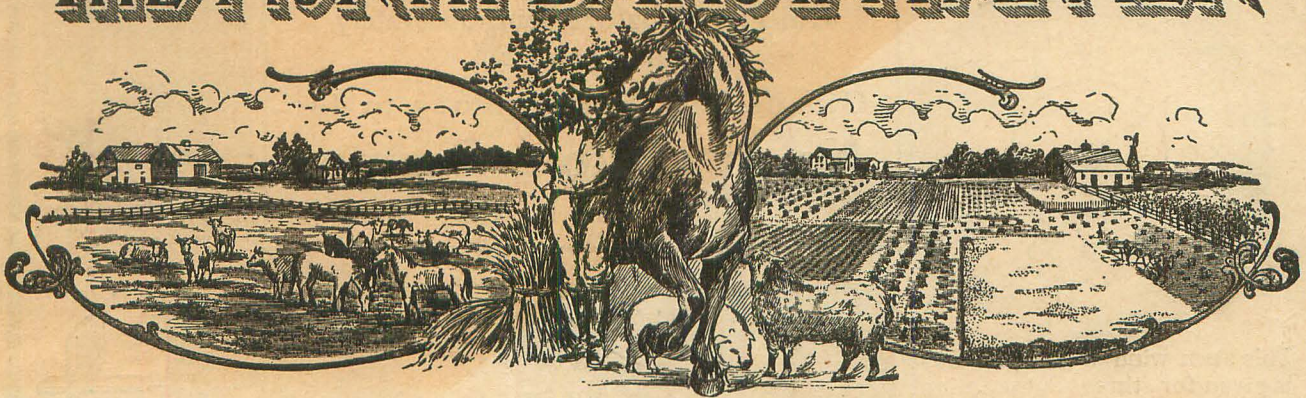


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THE NORTH DAKOTA FARMER



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Vol. 12 · No. 7

Lisbon, North Dakota, January 15, 1911

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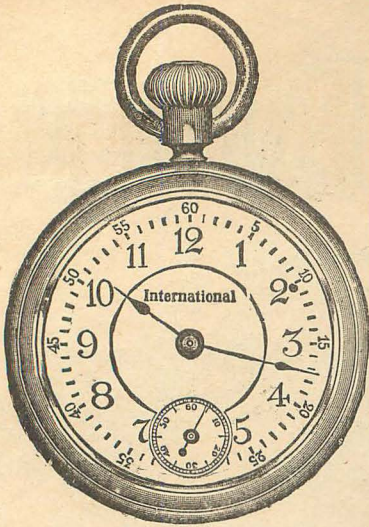
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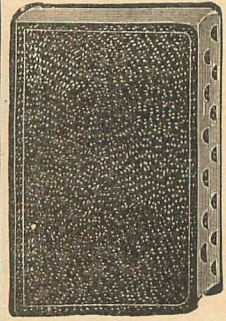
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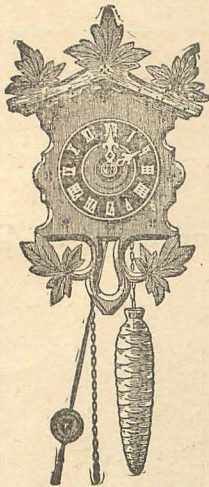
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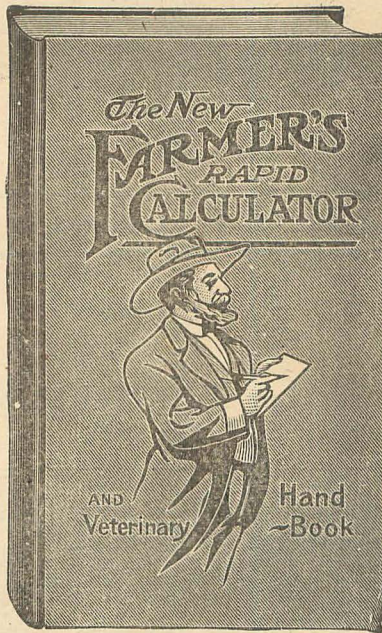
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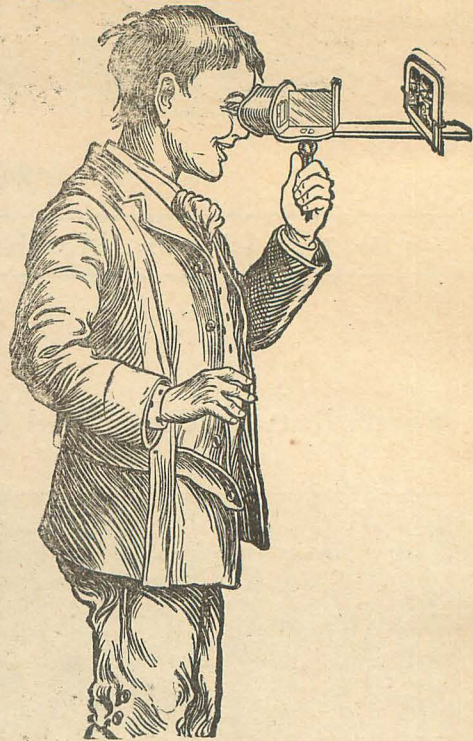
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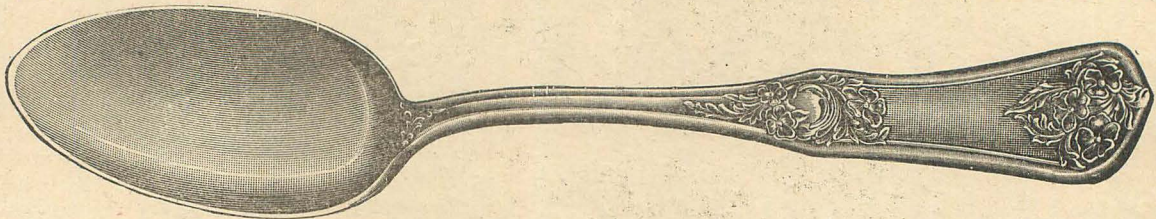
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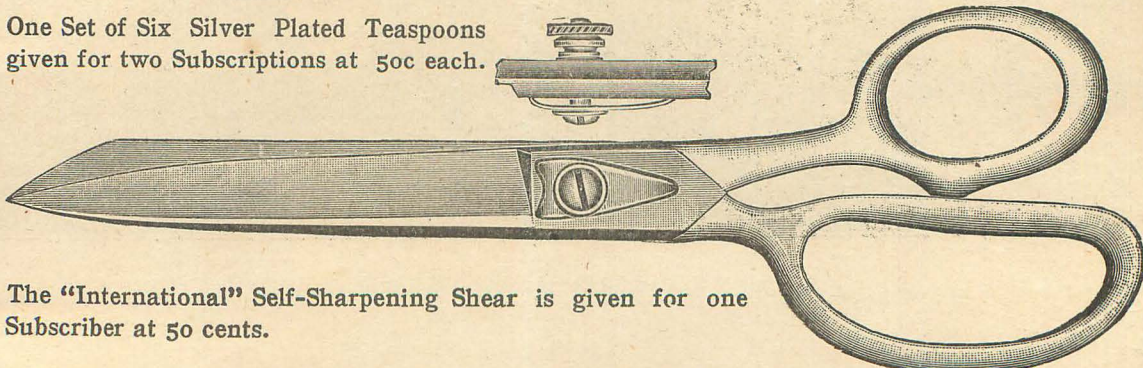
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THE NORTH DAKOTA FARMER

Vol. 12, No. 7

LISBON N. D., JANUARY 15, 1911

50 Cents a Year

Conservation of the Soil

By Prof. H. L. Bolley, Extract from Paper Read at Washington, D. C.

Wheat-Sick Soils

North Dakota contains many sections of school lands which have lain idle as prairie sod during the 20 to 40 years in which the surrounding lands have been cropped to wheat. The quality of this native prairie sod lands cannot be called into question. A section may be the best in the neighborhood and yet when such a section is broken up, even tho worked by the best improved machinery and given the very best culture conditions for the growth of wheat, the yield of such a section is not now expected by our farmers to be greatly above the average for the old lands immediately adjacent. In a normal year wheat upon such fields no longer weighs 60 pounds to the bushel, nor is it a reasonable expectation that it shall be 25 to 40 bushels per acre. It is very likely not to outyield the fields immediately adjacent which have been under crop for 30 or 40 years. The quality of its seed is even more likely to be shriveled and of light weight per bushel. My investigations, extending over a period of nine or ten years have gradually convinced me that the older wheat areas of the northwest are in exactly the same status as the old flax-cropped lands and may quite properly be spoken of as wheat-sick in the same sense as we have previously spoken of the old flax lands as flax-tired or flax-sick.

Fertility Still Present

These lands in neither case are exhausted for the particular crop mentioned. There is an abundance of fertility there for the production of many crops of greater yield than has heretofore been obtained, but the soils are not in a sanitary condition. The chemist and the agriculturist were right when they said continued cropping had brought about deterioration of the grain, but the chief explanation rests not in the loss of nitrogen and of other kinds of chemical matters. Fields that have been cropped only two or three years show the same deterioration in

yield and the same deteriorated quality of grain, and plump grain cannot be obtained by the addition of barnyard manures to such soils. What has happened is that constant cropping has carried to the soil the various type of parasites which the wheat crop and flax crop are heir to. I do not question that it is possible by continuous cropping to so reduce a soil with reference to the same particular chemical element as to materially interfere with the yield of a given crop upon the soil. But I have reached the conclusion that there has not been sufficient continuous cropping done in North Dakota or any of the northwestern states to account for the disappearance of the flax crop or for the marked deterioration of the wheat and other cereal crops, both in yield and quality of grain.

That proper crop rotation results in increased yields and better quality of grain cannot be questioned. But the processes involved in such crop rotation are those which are most directly liable to tend to bring about the purification of the soil after it has once been infected with diseased producing organisms. The processes of seed selection, crop rotation and seed-bed formation, as usually described, are requisite for proper crop development, but in the presence of internally diseased seed and disease-infected soil, the crop cannot and does not reach proper fruition.

It will be readily seen that the conservation of the purity of the soil becomes a question of the greatest necessity to agriculture. What is important about the matter is that it affords a reason for most approved farming methods which are evident to the most uneducated person and does not of necessity imply the condemnation of the fertility or of the physical qualities of the soil and of the work of many farmers who, missing only this matter of seed and soil sanitation, are doing better work in cereal cropping than has ever been done before.

If diphtheria patients are brought into a school room where there are other children the health officer immediately undertakes the work of saving the lives of the children by preventing the spread of the disease. The school room is ordered closed, and disinfected and measures are taken to prevent the individuals exposed from developing the disease.

Effect on New Land of Diseased Seed

So with the old land areas which have been cropped to wheat and flax there is a possibility that we may be able to bring these lands back to the old time yields by proper methods of disinfection and proper methods of preventing the further introduction of the diseases. This, potato men have by their methods of seed disinfection and field spraying demonstrated to be clearly possible. For the new land regions of the west, where there are yet thousands of acres of virgin soil let me say that it is unnecessary that the deterioration that has been previously noted for the flax crop, wheat crop, oats crop and barley crop should take place so rapidly as in the past. It is unnecessary that these new lands should be spoiled for the culture of flax by the sowing of shriveled, disease bearing seed or the spreading of uncomposted manures, and likewise it is unnecessary that the lands of the west new to wheat culture should become so rapidly infected by such disease producing fungi as has been the case in the past. We are now able to list five or six distinct fungus parasites which live internally in the seed of the wheat plant bringing about shriveling of the grains, which grains, when planted in new land, bring about the introduction of diseased, mouldy growths, which rapidly spread in these soils as in the case of flax wilt and flax canker. Where a diseased wheat kernel falls on the new land there will be a sick straw, and the following year a healthy grain, free from disease, planted at that spot will bring forth shriveled seed, in which the chemist

possibly might find a deterioration, when in reality it is only soil infection.

It is then a matter of great importance to every citizen of the new lands of the west to talk conservation of the purity of the soil, and let it be the aim of every person to educate his neighbor to the fact that it is possible largely to prevent the introduction of the diseases which bring about the deterioration of the wheat crop, flax crop, oat crop or barley crop, and so on down the list. We have in this conception of the necessity for the retention of the purity of the soil, a work in which business men are as deeply interested as the farmers themselves. The business men of a small western city surrounded by the virgin soils of the prairie can ill afford to allow the newcomers to that region pick up poor diseased types of seed and sow upon the new lands adjacent to their town, thus thru wind blowing and thru the washing of surface waters to infect the soils of the adjacent areas, lessening the output of all products in that vicinity and discrediting the quality of the soil.

Conservation of the purity of the soils means that the crops seeded upon fertile lands may make use of that fertility. It means more bushels of normal quality grain for sale by the farmer and cheaper bread for the toilers in the city.

Conservation Applied

How are we to carry out this conservation of the purity of the soil? This question is a many-sided one. Every crop and each type of soil must be dealt with in an individual manner, but in general, proper seed selection, proper seed treatment, proper soil cultivation and proper rotation will maintain the purity of virgin or western soils and will tend to bring back the crop producing capacity of those which are already contaminated.

As we are wont to condemn the greed for gain in the manufacturing and the great corporations who would fell the last tree without a thought for the morrow's forest, as farmers and as advisers of farmers, let us know the evils of constant single cropping of lands and the evils of diseased and disease-bearing seed, wage such a campaign for the conservation of the purity of the soil as shall make any planter who thinks only of the number of acres he can plow, sow and reap, feel that he is as much of an evil doer as those who deplete our forests or wastefully exploit our mines; for such methods not only tend to permanently lessen the chemical fertility of the soil, but they injure its mechanical and physical texture and also destroy the producing powers of the most fertile soils

by bringing them into unsanitary conditions and thru infection also destroy the producing powers of the lands of others, both near and far.

This prominent fact that wheat and other cereal lands can lose their productive capacity without materially losing either chemical fertility or the mechanical texture, which is essential to a crop, is one which is of particular interest to citizens of the new lands in the west.

Protecting Land Against Disease

We have long since reached the point when we have arranged for such laws that a citizen of a town is not allowed to carry infectious diseases from family to family. And I think we are beginning to reach the point when we recognize that the person who thinks he owns the land, only temporarily resides upon it, and has not a moral right to rob it of its fertility that he may rapidly gain a few more dollars. Only by careful manner of procedure can one hope to get the other point recognized, that aside from robbing the land of its fertility by extracting the physical and chemical constituents suitable for growing, the grower who persists in methods of seeding and cropping which soon infects all the land which he touches with those diseases which infect farm crops, is no less an enemy of society.

As we are now recognizing that education of the people along sanitary lines will do more to protect our homes from diphtheria, typhoid and tuberculosis, so also must we as farmers and as educators hope to muster our organized efforts to educate our neighbors as to sanitary methods of handling the soil and the crops which grow upon it, for this proposition of the sanitation of the soil and the maintenance of the purity of the virgin soils from disease is a complex problem, dealing with matters which can only be reasoned about and, for the many, be explained only thru demonstration.

Of Interest to Business Men

I have heard many an expressed belief by business men condemning the farmer, and indeed all farmers indiscriminately, because of their carelessness, shiftlessness and ignorance, and indeed indolence, but have such business men any duty which calls more intensely for thought and perceptive faculties than these same problems of soil fertility, soil sanitation, cropping methods and general agricultural demand?

I contend that such facts as I have cited in this paper call for efforts in popular education which shall carry demonstrations of the principles of conservation of the soil, of cropping rotation, seed selection, seed disinfection,

and proper soil sanitation, directly into the rural schools and into every farming community. These are problems which not only affect the individual, but society, as a whole, and it cannot be expected that an education which has dealt only with reading, writing and arithmetic should furnish the equipment to properly deal with such problems of national concern.

DOING THINGS

By W. C. Palmer

Fergus was the first place in North Dakota to start a consolidated school. They began making preparations in 1903 holding elections, voting in favor of it, and voting bonds. In September of 1904 the building was completed and classes begun, two rooms were sufficient at first, but in 1905 a third teacher was engaged. The children are brought in busses; there are now five in use. The school is in session nine months and the attendance for the year is about 90%. This is certainly very unusual for children in the country.

Having quite a distance to go to trade the farmers got together and organized a stock company, and built a store and put in a stock of goods. They mark up the goods 25% above wholesale prices and at that they undersell the merchants in the surrounding towns. After paying all expenses they have declared a dividend each year varying from 10 to 33% and the store has been running six years.

When they were planning to hold a farmers' institute those who had the matter in charge appointed a committee of ladies, six in number, to provide for feeding those in attendance. These ladies divided up the community, each one to see seven other ladies which they did. Forty-one brought supplies and they were abundant ones. When time came for dinner, which was served in the same hall as the meeting was held in, the ladies served the meal on plates, dishing up meat, potatoes, sandwiches, pie, cake, pickles, coffee and what not, till the plates fairly groaned. These were passed around by the girls from the high school (two years of high school work is given in the consolidated school) The building was crowded to its full capacity, yet by 1:45 the meal had been served and the dishes packed up and every thing in readiness for the afternoon meeting. The dispatch with which the work was carried on shows the result of having worked together.

The farmers' institute held there the 13th and 14th of December was very well attended. The speakers were Supt. Hoverstad, Profs. Randlett and Palmer. The main line of discussion

(Continued on Page 6)

From the Farmers' Institutes

SOME INTERESTING EXPERIENCES

The discussion at the Oriska Farmers' Institute brought out the fact that most of the farmers are growing corn and with much success. Mr. J. A. Heiling has grown ten to twenty acres for the last four years. His corn has matured every year not excepting 1910. Next year he will plant sixty acres. He finds that it averages from 35 to 40 bushels per acre, that it is a sure crop, and that it increases the following crop of grain by at least a third, which about pays for growing the corn. The fodder is also very valuable. Many shred their corn, there being three or four corn shredders in the neighborhood. Some thresh it with the threshing machine. Mr. Fred Smith uses this way, and also threshes some oats with it. He finds that both the fodder and the grain keep better when mixed with the oats. He also feeds them in this way to his horses.

The average of the crops was this year 5 to 6 bushels per acre. One farmer who had a field that was hauled out last year this year had a 20-bushel crop. He said that he plowed it early and plowed under the wheat. This both added humus and in plowing early saved up moisture for this year's crop.

The discussion centered principally around corn and clover growing. Some of the farmers have been successful in growing clover and without inoculation, which indicates that the soil here has the germs, so that it is not necessary to introduce them. Clover grows freely along some of the roadsides.

Mr. M. B. Johnson in his talk on the corn crop, gave the following outline for its successful growth. If it is to be planted on land that was in grain the previous crop; he would disc it as soon as the crop is cut. This will loosen up the surface, thus stopping evaporation. It will also kill the weeds and thus save moisture too. Plow either early in the fall or early in the spring, putting on manure first, however. Plant rather early and cultivate shallow. He advised selecting the seed in the field—selecting ears that grow on the kind of stalks that one prefers, and well-matured ears: putting them where they will dry out thoroly, for, if they freeze before they are dry, it will kill the germ. The drying will also keep the germ more vigorous.

Prof. Palmer gave talks on Dry Farming and clover and alfalfa growing.

MIDWINTER FAIR AND FARMERS' INSTITUTE

Judging from the exhibits at the Mid-Winter Fair held at Larimore, one would get the impression that the past season had been one very favorable to the growth of bumper crops. Vegetables, grains and corn, large in size, fine in quality and the number of exhibits large; 289 in all. It is a splendid demonstration of what can be done even in an unfavorable season when the proper methods are put into use.

The exhibit from the schools is also one of outstanding merit. The home economics department had articles of food that they had prepared that from their appearance would tickle the palate of an epicure. The manual training department had articles made by the boys that would put many a cabinet maker in the shade. There were also paintings, drawing and many other exhibits from the schools. Larimore children are to be congratulated on being taught such things as agriculture, home economics, manual training and those things that prepare one for life and that are of the highest educational value.

The Farmers' Institute brought together the farmers from all the surrounding country. The speakers also came from different sections, experts who related their experiences. Supt. Hoverstad was in charge and was assisted by such men as President Worst of the Agricultural College, Supt. Waldron of Dickinson, Supt. Porter of the Demonstration farms, Prof. Palmer of the Agricultural College and others.

At the opening session potatoes was the first subject that came up for discussion. Supt. Waldron related the results of his experiments. He has found that it is necessary to keep on selecting all the time if the quality and yield is to be kept up.

At the afternoon session the main talk was by President Worst on Dry Farming. He is the president of the Dry Farming Congress which is an international organization. He called attention to the principles that are concerned in the saving of moisture, that have been found to be practical to use in the growing of crops where the rainfall is inclined to be a little less than in the so-called humid region. Deep plowing is the first great principle. It opened up the soil so that the rain when it falls can penetrate into the soil instead of running off. The next great principle is to hold the moisture in the soil after it has been once gotten into it, till the crop is ready

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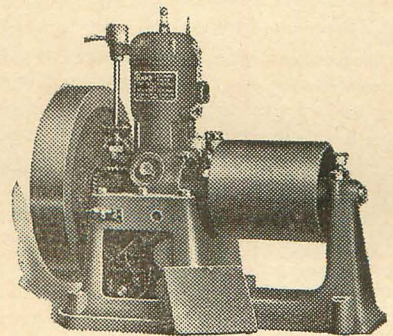
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for it. The way to do this is to keep the surface soil loose, moisture can not move thru a loose soil. For this reason the cultivation given such a crop as corn is splendid as it keeps moisture from evaporating. For the same reason it is well to harrow the grain after it is up two or three inches. This will not hurt the grain but it will fill up the cracks, will make a dust mulch and will kill a number of weeds. Do it thoroly and note the difference. Another principle to keep in mind is to keep the soil full of organic matter. This helps to hold moisture, to hold plant food, to hold the soil grains together so that they will not drift. This is very important. If attention is not given to this there will in time be no soil to till.

At the evening session there was music rendered by pupils from the schools. The talk of the evening was by President Worst. He spoke of the dominion that man has over nature, how man has tamed nature. How he has taken electricity that used to terrify man in days gone by and has made this powerful agent run his cars, carry his messages over the world, even to carry his voice for thousands of miles, and even without the aid of a wire.

How man has taken the wild horse and made him his servant, how he has taken the different animals and made them do his bidding. How he has taken the wild apple and bred it till it produces a fruit that suits the palate of man while in its wild state it was so bitter that even the animals and insects left it alone; in fact, it was its method of protecting itself against its enemies. Now man does that and the apple gives all its energy to making a fruit of quality. It has made it more tender so that man must give it care. It can not fight its enemies as it used to do when wild. In giving quality it has lost strength. To keep on getting that quality that we want no matter in what crop or animal we must give them the food and the care if we do not they will begin reverting to the wild state.

He spoke of the wheat that was not given the care, that was left to fight weeds, how it produced but few kernels, how it was mustering its fighting powers instead of producing wheat. That the result was not that it smiled on man but rather turned up a surly face in its desperate struggle for existence.

He also told of the need of studying these things on which the very existence of the human race depends. On which all its pleasures and accomplishments depend. He complimented Larimore on giving attention to these things in school by teaching concerning what a great many of the students will be occupied with when they enter active life.

Latest! Special Offers, Page 2

EFFECT OF SPRAYING OAT FIELDS WITH IRON SULPHATE SOLUTION FOR ERADICATION OF WILD MUSTARD.

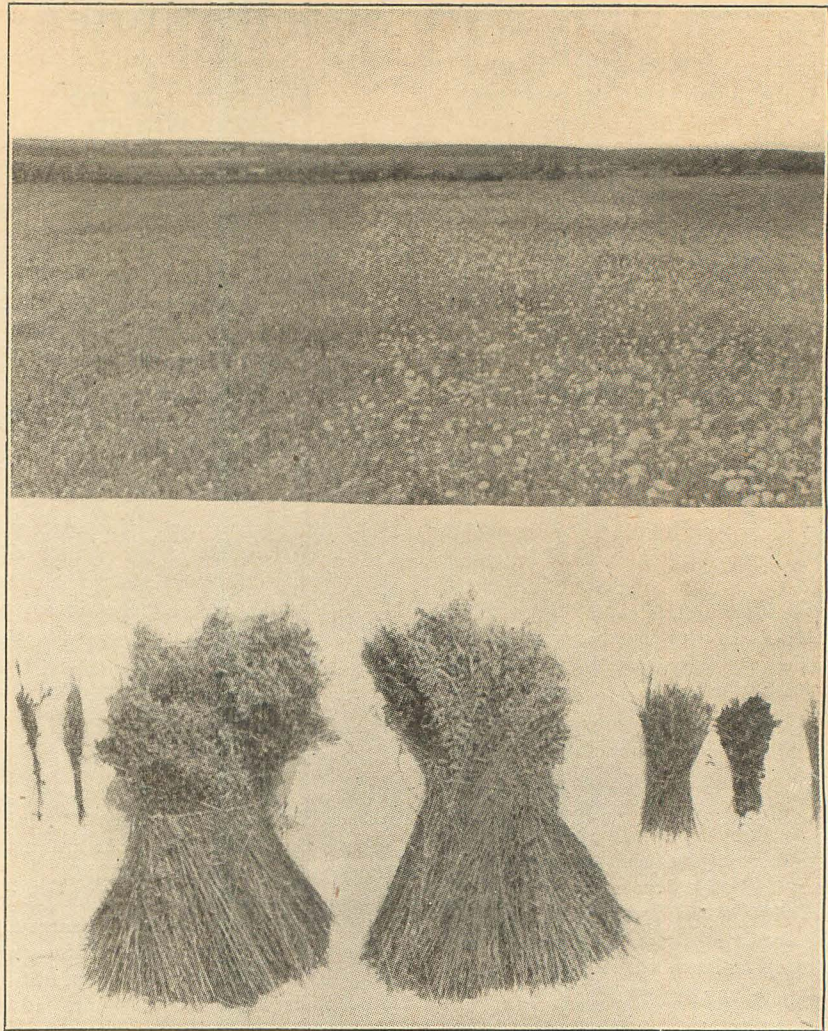


Fig. 1. Field to Left Sprayed, Strip on Right Unsprayed. (Showing mustard plants in blossom three weeks after spraying.)

Fig. 2. On Left, Oats and Weeds From Three Harvester Bundles From Treated Plat; on Right, Same From Untreated Plat.

DOING THINGS

(Continued from Page 4)

was on the subjects of corn and clover. Mr. Thomas Mooney of Fergus grew a great crop of corn in 1909. He had a field of 75 acres that went 70 bushels per acre. He raises a great many horses and that fall bought a great many hogs so that he fed it all on his farm. He said that it was the first year that he had grown corn and that the crop was so big that at first he did not know what he was going to do with it. He shredded the corn putting the fodder in one big stack, and it kept well. Of the corn he put some in the granary but most of it in open cribs.

The farmers organized a club with Thomas Mooney as president, T. K. Tobiason as Vice President and Hector

McKenzie as Secretary. They will hold meetings perhaps twice a month, the farmers coming together and telling each others' experiences. They will also call in outside talent to attend the club at times. They are also planning on bringing their families and a picnic dinner and making a day of it, combining the social with the practical. This certainly augers well for this community.

One of the striking experiments of the Alabama Experiment Station with cowpeas as a green crop was where the succeeding crop was cotton. The yield of seed cotton thus following cowpeas was 1533 pounds against 837 pounds on an adjoining similar plat that had been in cotton the previous season—a clear gain of 696 pounds.

Why? Where? When? How?

Have you a Query? Write the North Dakota Farmer

Q. What tree beside the willow makes a good wind break?

A. The boxelder is good for this purpose.

Q. How much will a good cow return for a dollar's worth of feed?

A. At least two dollars.

Q. Why harrow grain?

A. It kills weeds and in leaving the surface soil loose saves moisture from evaporating.

Q. How is cream ripened?

A. By allowing it to stand at about 70 degrees till it is sour enough to churn.

Q. What is the best kind of corn for the silo?

A. Any corn that will reach the glazing stage by the first of September is satisfactory for ensilage.

Q. What are the advantages of a Farmers' Club?

A. This will depend on the spirit and activity of the club. The live club furnishes a means for the farmer to exchange ideas. Books, bulletins and paper articles may be reported. Speakers from the outside may deliver addresses. The social side of farm life may be cultivated. The club may form the basis of business negotiations.

Q. If a cow gives 175 pounds of butter in a year is worth \$60, how much is a cow worth that gives 350 pounds of butter in a year?

Q. Suppose that butter will average 25 cents the year round, and it will do better, and that the feed is worth \$40 for the year. The first cow would give a return of \$43.75, less \$40 for feed would leave a profit of \$3.75, counting that the milk, calf and manure pays for the labor.

The second cow would give a return of \$87.50 for butter and would give at least 4,000 pounds more of milk which at 20 cents per hundred pounds, and it is worth more for feed, would bring \$8. The calf from the good cow is also worth more, but let that go. The return would be \$95.50 less \$40 for feed or a profit of \$55.50 on the same basis as the other cow made a profit of \$3.75. It would take practically fifteen 175-pound cows to make as much profit as the one 350-pound cow.

\$3.75 is 6.2% on \$60 and \$55.50 is 6.2% on \$895.16. On the basis of percentage income, when the 175-pound cow is worth \$60, the 350 cow is worth \$895.16. The keeping of the cows should be looked at from the business standpoint. The poor cow is dear at any price but the good cow is usually not rated at her real value.

Q. What is the best feed for a dairy

cow fed with corn fodder, timothy or prairie hay?

A. Bran is one of the best feeds to use with the above.

Q. Which will freeze deeper a dry soil or a wet one?

A. The dry soil will freeze deeper, water being a poor conductor of heat and cold, will keep the cold from going down so fast.

Q. How can trees be protected from rabbits and mice?

A. Keep litter and straw away from trunk, then apply a whitewash containing paris green, or protect trunk with wire screen.

Q. Is there an excess of potash in alkali soils and do they contain sufficient nitrogen?

A. There is usually an abundance of potash in alkali soils and they usually contain adequate amount of all the important elements of plant food for crop growth. There is nearly always enough nitrogen, but there may be a rather small amount of humus in some cases. The use of commercial fertilizers carrying nitrogen, phosphorus or potassium is usually detrimental rather than beneficial.

Q. Would timothy and clover hay be a good feed for dairy cows?

A. It would so far as roughage is concerned, but it would be necessary to feed some grain along with it.

Q. What is the best variety of oats?

A. There is no variety of any grain which can be recommended for all conditions. The Tartarian and White Russian are two of the best late oats. Sixty-Day is one of the best early oats. There are many varieties suitable for local conditions.

Q. Would it pay to build a machine shed?

A. Emphatically yes. A shed need not be expensive and yet be convenient and furnish adequate shelter for all machinery. The life of some machines may be doubled by shedding when not in use.

DAMAGED FLAX

I am very much in need of advice and would more than appreciate your help. I have a piece, 60 acres, of very late flax which I had to let stand as long as possible on account of it being very uneven, well, the snow caught most of it in the wind-row, as we had had so much fog that I was able to get up only a few loads before the snow I dug it out and bunched it and then the worst trouble

started as the wind blew many of the bunches full of snow; we shook it out as well as we could, but of course this still left considerable snow in and we stacked it. What is the best thing for me to do with it? There is at least 5 bushels per acre in it. The thresher claims he can get most of it out now and yet he does not want to thresh it by the bushel. One man tells me he saw flax successfully threshed when they had to chop much of it out of the stack with axes. Shall I try to thresh it now or can I save more of it by waiting until spring, after it thaws out? The weather is now running about five below.

Answered by Prof. Shepperd

I am in receipt of your favor of recent date and have carefully noted what you say.

It seems to me that there are only two methods of procedure open to you with your flax. One is to thresh it when the weather is so cold that there will be no melting of the snow, which is in it whatever. The other would be to take down the stacks and spread the flax out in wind-rows and let it dry out. I think you have made a mistake in stacking it up, for flax can lay out in the winrows thru the winter and can be threshed in the spring without very serious damage; at least, I have seen several cases of that sort where it came out all right.

It seems to me that if you thresh it when the weather is cold that a considerable portion of the snow should shake thru the sieves and leave your flax seed fairly well separated from it.

If you will put the flax in an elevator where they can handle it over and where they will have plenty of room to spread it out to dry when warm weather comes, I believe you will be able to cure it up without great difficulty. The elevators are not apt to have a large amount of grain in stock from this time until spring, and should be in position to spread it out thinly and take time to handle it over as much as it will require.

The price of flax seed on the market will help you, as they will hesitate to take any chances when the seed is so valuable.

There are a good many difficulties in the way of taking it down from the stack and curing it in winrows. Heavy snows may come after the weather has been warm enough by spells to thaw the snow in the stack. Handling the flax over this extra amount will cause you a heavy loss in the bolls that will pull off and the seed which will shatter.

I believe that threshing it in below freezing weather will be your best means of procedure. I do not believe that the fact that the thresherman will not give a per bushel proposition on your job is evidence that he does not believe that he can thresh it as well as he tells you he can. Threshing in cold weather is apt

to cause him heavy loss of time and possibly trouble also with his engine. I presume this is the reason that he does not see fit to make you a per bushel price on the job.

Q. What is the food of the meadow-lark?

A. The meadow-lark feeds almost entirely upon insects. Over three-fourths of its food consists of insects captured in the fields. About twelve per cent of the remainder is weed seeds and a small amount of grain gleaned during the winter from waste grain scattered in the fields. During the summer its diet is made up almost exclusively of insects. Insects are preferred to other food and are always eaten when they may be obtained. During the winter months many dormant insects are found and consumed in places where the meadow-lark winters.

Among the destructive insects upon which it feeds are grasshoppers, crickets, moths, butterflies, weevils, curculios, billbugs, leaf-beetles, click beetles, chinch bugs and plant lice. Many larval insects, as wire worms, cutworms, and army worms are consumed also.

They destroy the seed of pigeon-grass, panic, grass, smartweed, ragweed, mustard, and other weeds.

The meadow-lark is one of the most valuable birds to the farmer and should never be shot or disturbed in its nesting.

Q. Should the bob-white be killed out?

A. The most certainly should not be killed out. On the other hand they will repay bountifully all effort expended in protecting them and favoring their increase. The farmer should never allow more to be shot for game than the surplus stock, being sure to leave plenty of birds for the next year's nesting. The live birds on the farm are worth much more than the dead birds on the table, however well they may be cooked.

The bob-white or quail is naturally trustful and where undisturbed becomes remarkably tame. He will rear his young and spend his days close to human dwellings, adding cheer by his merry whistle. More important than this, however, from the money standpoint, the bob-white is a strong ally of the farmer in the fight against weeds.

(Continued on Page 10)

THE 1911 GRAIN GROWERS' CONVENTION

By J. H. Shepperd

I fear that the short crop may make some of our people forego attending the Grain Growers' Convention as a means of economy this season. Each family is a better judge of what they can afford to do than any one else, but I would suggest that it is poor economy to fail to get

information that is available, and would urge that if an investment can be spared that it will be a good one to make.

The convention supplies a great deal that is valuable in its sessions and the attendant gathers many things from his neighbors during the intervals between the different portions of the program. I have known of many instances of securing extra fine seed on the part of farmers who attended the convention, which resulted in the adding of many times the cost of the trip to the income of the farmer. In other cases I have known of those attending the convention securing breeding stock that proved highly valuable to them in the course of the years that followed. What has come to our people from the information and from the higher ideals of livestock and grain, to say nothing of the trees, shrubs, fruit, and ornamental things about the farmstead, I am not in so good a position to state, but I believe they will overbalance the other items which I have named. More than one person has come to realize the difference between good and poor cows in his dairy from having attended one of these conventions. Many a star boarder cow that has not been paying her way at all has gone to the shambles as a result of the suggestions which her owner gathered at this annual farmers' convention.

I am informed that this year a special session for women is to be held on Wednesday and that a number of things will be discussed which are of interest to them especially. Poultry will particularly come in for a good amount of attention and certainly will prove successful as well as interesting to the ladies who will attend. Women are always more than welcome in the halls of the convention at the men's sessions and not infrequently we have found that the women of the family have caught the good ideas more promptly than the men and thru their suggestions have had the same adopted on their home farms.

As I said in the beginning, I do not want to over urge any one to make an expenditure, in this season of short crops, but I do wish to urge that people are frequently pennywise in the matter of attending conventions where so many experts on farm matters will be present.

GROWING FLAX ON NEW LANDS

By H. L. Bolley

The high price of flax seed and of its various by-products, associated with the effects of the great drouth which has occurred in the flax seed growing regions of America, tends to make the question of cropping to flax one of extreme interest.

The short crop of 1910 was, in part,

due to the excessive drouth and in part to the very intense action of the root diseases of flax under drouth conditions. The drouth not only cut down the yield on new land where clean and properly treated seed was sown, but on those lands which were infected by root diseases, it practically eliminated the crop.

Many of the finest fields that were to be seen growing during this season also suffered severely by early frosts. In most cases, the flax was late on these fields, not because the farmers had sown too late, but because the condition of the seed bed prevented germination until rain fell.

This very discouraging, drouthy year, therefore, should not be taken as an index as to what can be done with flax in the future. And, now that we know most of the causes which have brought about the rapid deterioration of the crop on new lands, there is no reason why flax seed growing should not prosper in a manner not previously possible. It was long known that flax is subject to rust and blights, but it is only of late years that investigations have been such as to demonstrate that plant diseases infesting the soil are the chief causes of the rapid deterioration in flax yields on new lands.

It is the history of the flax crop, that on new lands it at first is a success, but that after comparatively few crops the yield rapidly falls until it is no longer profitable. Farmers have usually assumed that the soil is depleted chemically, that some necessary chemical element is removed and many noted agriculturists have claimed that flax cropping is hard on the soil, injuring it for other crops. These beliefs, I believe, have been disproved. Flax is not particularly hard upon the soil, but the methods of cropping have usually been careless and of such nature that the soils speedily become infected by flax parasites, which destroy the plants.

These considerations make the questions as to what to do in order to grow flax on new lands and upon old lands of the greatest importance.

Essentials of Flax Cropping

1. The first essential in flax cropping is to clearly appreciate that the diseases which bring about deterioration of the crop are transferred from field to field primarily by the seed, but often by the blowing of dust from infected flax lands, by drainage waters, by plows, harrows, threshing equipments, infected manures, etc. It is, therefore, of first importance that careful methods of preventing soil infection should be followed every year by all growers. Unless farmers are willing to persistently make every effort to prevent the introduction of the root killing diseases into the soil there can be very slight hopes of re

taining the flax crop as a permanent element of agriculture in any community.

2. The next essential rests in proper crop rotation and proper seed bed formation.

Preparing New Lands for the Sowing of Flax

If the seed is to be placed on new breaking, best results usually follow spring plowing. The seeding should be done as soon as possible after plowing. The moist earth and compact seed-bed gives a rapid first growth and the crop is usually comparatively free from weeds. If the land is broken in the fall, it is apt to be filled with any of those weed seeds which may be blown and tumbled by the winter winds, and these plants make strong competitors with the flax on newly broken areas, unless special provision is made for destroying them before seed time.

How to Proceed in Spring Breaking

Break the sod as deeply as can be done and yet have the furrow slices lie flat. The plow should be followed immediately by a heavy roller or some similar soil packing tool. The large corrugated type of metal rollers or clod crushers do a splendid sort of work on new breaking, tending to loosen the dirt from the masses of grass roots. A good roller for such work can be made at home by the use of concrete. The roller should be followed by a peg-toothed harrow, drawn parallel with the furrow slices, the harrowing being done to further loosen the dirt sufficiently to fill the spaces between the furrows and to furnish cover for the seed. The drill should immediately follow the plow, roller and the harrow, placing the seed into the moist, firm seed-bed thus prepared. Follow the drill immediately by a heavily weighted float or stone boat or roller, drawn over the surface to level, firm down the soil, and cover the seed.

If the work of plowing is done with a heavy traction plowing rig, all of these operations can be done at one time. This gives great advantage to the flax over any method of planting which separates the plowing, rolling, harrowing and covering processes, because the seed falls at once into the moist ground, while if the operations are conducted separately, the soil tends to dry out rapidly. If the operations are done separately, they should follow each other as soon as possible. Even tho each implement is drawn by separate power, the order of work should be as nearly immediate as possible, and the seeding should be done immediately following the last harrowing.

An attempt should be made to have the drill place the seed down one-half to one inch, not deeper than one inch nor less than one-half inch. Before sowing, careful attention should be given the se-

lection of the seed. Poor, scaley, diseased seed is what is ruining the crop of flax, and destroying the usefulness of the land for future flax purposes.

No matter how plump and brightly colored the seed, there are apt to be wilt spores present. This is due to the fact that the disease is very general, and only a few sick plants produce an enormous number of spores which rattle off of the dead straws at threshing time and stick to the seeds.

Clean all seed thoroly so as to remove all sticks, dirt, chaff and scaly seeds. Then treat the seed with formaldehyde as described in our press bulletins Nos. 3, 14, and 23. It is absolutely essential in raising flax to disinfect the seed. It is not difficult to do, if the man who does it is provided with a proper compressed air sprayer so that he can throw a fine misty spray upon the grain while it is being shovelled and raked over. Use 1 pound of formaldehyde to each 40 gallons of water and approximately one-half gallon for each bushel of dry clean

seed. If the grain is thoroly shovelled and raked while the spraying is being done the grain will be found to be evenly damp all over. If left piled for from one to two hours it will be found fit to pass thru the drill without difficulty.

Those who do not properly treat their seed not only spoil their own chances for good crops but spread these destructive soil diseases to neighboring lands.

Sow not to exceed one-half bushel of good flax seed per acre. If it all sprouts there will be plenty of young plants. It is not wise to sow any flax seed which will not sprout at once.

Study Crop Rotation

Any rotation of five or more years will do wonders for flax cropping, but it will be wise to introduce at least one grass and one cultivated crop in the series.

Remember that uneven depths of planting gives uneven ripening and that a firm seed bed will allow you to get an even depth of planting. A firm seed bed helps to protect the roots of the young plants from drouth and disease.

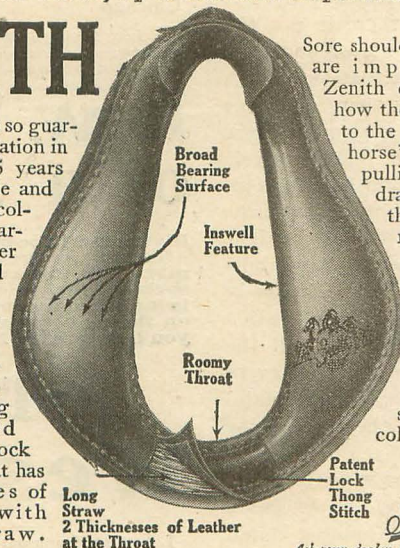
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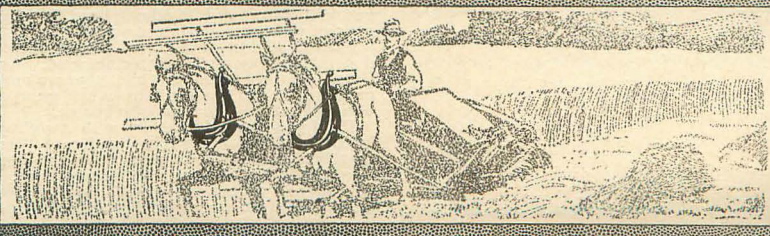


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WHY, WHERE, WHEN AND HOW.

(Continued from Page 8)

Q. How can we farmers get together on social lines?

Answered by W. C. Palmer

A. Farmers' Clubs can be made social centers as well as the place for exchanging experiences on farm and home topics.

This is the day of cooperation or combination. Men in all lines of effort, except possibly the farmer, come together at more or less regular intervals to talk over their work, to give each other the benefits of each other's experiences, and to come to a better understanding in their business relations. The different manufacturers, the editors, the retailers, the scientists, the educators, laborers, etc., hold meetings. Why not the farmers? We are in more need of it than any of the others, from the social standpoint, from the standpoint of swapping experiences, and from the standpoint of a better understanding of business matters.

As farmers we live more or less isolated and our work is so varied that it has something of interest and that needs attention all the time, yet we must learn to drop it all for a social hour occasionally and for our wives and children as well as for ourselves. In fact they need it more than we do as there is not the variety in their work nor so much to hold their interest and attention.

In every community there are some farmers who are making a good success with something, as growing corn, trees, potatoes, fruit, or raising cattle, hogs, horses, etc. There is no magic about it, except doing the right thing at the right time, and they would be glad to tell how it was done. They are likely not ready speakers before a large audience but in a conversational way they can tell the story. If all were to study and try to improve along the lines of the successful farmer it would make the community an outstanding one.

Then there is the good wives in every community who have had fine success in some line of her work, as making bread, canning fruit, growing flowers, house decoration and the hundred and one other things.

The community has among its members those who can teach each other from their own experiences, and the farmers' club with its stated meetings is the ideal place to gather and exchange this valuable information. Few realize how valuable they are. Reports could also be made on bulletins from the Agricultural Experiment Stations and on articles in the Agricultural papers and magazines.

Such a club would bring together a great teaching force; specialists in almost every line of farm and home activity.



Heavy Fence For Economy

WOVEN-WIRE FENCES must be heavy as they have to turn animals by sheer strength of the wire. A fence with barbs is protected from excessive pressure because the animal fears the barbs. Remove the barbs and the greatest strength of the animal is thrown upon the fence. Its wires must be larger and stronger. To have a long-life woven-wire fence the fence must be heavy.

AMERICAN FENCE

is a thoroughly galvanized square mesh fence of weight, strength and durability. Large wires are used and the whole fabric is woven together with the American hinged joint (patented)—the most substantial and flexible union possible. Both wires are positively locked and firmly held against side slip and yet are free to act like a hinge in yielding to pressure, returning quickly to place without bending or injuring the metal.

Dealers Everywhere—Stocks of American Fence are carried in every place where farm supplies are sold. The Fence is shipped to these points in carload lots, thereby securing the cheapest transportation, and the saving in freight thus made enables it to be sold at the lowest prices. Look for the American Fence dealer and get the substantial advantages he is enabled to offer. He is there to serve the purchaser in person, offer the variety of selection and save the buyer money in many ways.

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Send for copy of "American Fence News," profusely illustrated, devoted to the interests of farmers and showing how fence may be employed to enhance the earning power of a farm. Furnished free upon application.

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Divide the price by the years of service—figuring in the cost of repairs. That gives you the cost-per-year. And the spreader that is lowest in cost-per-year is the one you want—providing it is built on the right principle. On that basis, you'll choose the famous

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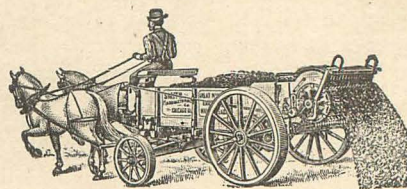
Let us send you our big Art Catalog at once, so you can see how a spreader should be made if it is to stand up and do good work for a lifetime. Then you will understand why so many spreaders are not giving satisfaction. You'll know just why the Great Western is used and endorsed by over 100,000 progressive farmers and by nearly every U. S. Government and State Experiment Station. When you know the Great Western

Construction

you will realize that a spreader doesn't have to mean constant repairs and trouble. When you read how much oak, hickory, steel, malleable and wrought iron there is in the Great Western—you will know why it is the lowest in cost-per-year of any spreader in the world.

First of all you want a strong spreader. That depends mainly on the materials used. And the Great Western Catalog proves that we spare no expense to put quality into every part of the Great Western—from pole to beater.

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about the great 16-inch unbreakable malleable fifth wheel—why the front end of the Great Western can't pull out—no matter how heavy the load or how soft the ground or how strong the horses. Read about the double solid oak bolsters. How they're set two feet under the load so that the weight is divided evenly among all 4 wheels. These are merely suggestions of the many Great Western features and advantages. Read them all, fully explained in our big, free book. When it comes to

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You'll find a Great Western Spreader of a style and size to meet your requirements—wood or steel wheels—capacity of 35 bushels to 100 bushels. And whichever Great Western you choose, you are guaranteed 50% less repairs, 50% greater durability and a 50% better machine than any other in the world. Write it in the contract if you want to. Send us your name on a postal now—ask for Spreader Catalog No. 8410

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Among Our Advertisers

W. A. Weber, the old, reliable poultryman of Mankato, Minn., begins his season's advertising with us in this issue. Every man or woman who wants to get started with high grade reliable poultry should have Mr. Weber's 1911 Poultry Book which costs only 4 cents to pay for the postage. Look up Mr. Weber's advertisement, and write him, and get this book.

We are glad to note how the Farmer Seed & Nursery Company of Faribault, Minn. is gaining ground rapidly among the leading seed-merchants of the United States. It is only a few short years since this concern was introduced as the Farmer Seed Company—an infant industry consisting of real, practical farmers who actually grew the products they offered and studied the problems from a scientific stand-point. Now their vast seed-farms are widely known; their square dealing methods have earned for them a tremendous patronage in this and foreign countries. Last year they expanded in the nursery near Faribault. They now grow everything in the nursery line, specializing apple trees which are grown by the millions, and sold direct at wholesale prices. This is the result of 20 years faithful application to their life-work. Their new 1911 Catalog will be issued in a few days—it's free to all interested.

From all parts of the United States and Canada trappers ship their furs to S. Silberman & Sons of Chicago. This great concern has built up a wonderful connection with hunters out in the wildest parts of the continent as well as those on the nearby farms. And this company holds this connection from year to year thru treating their customers fairly and securing for them the highest prices. They buy all skins outright for cash and charge no commissions or storage. The firm issues a Market Report every little while, which they will send free to any of our readers who send in their names to S. Silberman & Sons, Desk 50, Chicago, Ill.

When slaughtering time comes around the farmer appreciates such labor-savers as the "Enterprise" butchering outfit. This outfit consists of the "Enterprise" Meat and Food Chopper and the "Enterprise" Sausage Stuffer and Lard Press. These machines raise the quality of your sausage and lard, enable you to command higher market prices, and do away with much of the hard work of hog killing.

The "Enterprise" Meat and Food Chopper, used in sausage making, is the only chopper that cuts without tearing or crushing, so that the meat retains all

its juice and natural flavor. It does the work much quicker and better than the old hand chopper or the ordinary cheap "crusher," and it is also useful in the kitchen every day in the year.

The "Enterprise" Sausage Stuffer and Lard Press (two machines combined in one) eliminates nine-tenths of the hard work of sausage stuffing and lard rendering. This machine has a patented corrugated spout that prevents air from entering the casing, thus assuring the preservation of your sausage. It also stuffs the sausage skins much better than any other machine. Used as a lard press, it will give you surprising results—more and better lard than any other machine.

From one season's increased profits, by their use, you could more than pay for the "Enterprise" Meat and Food Chopper and the "Enterprise" Meat and Food Chopper and the "Enterprise" Sausage Stuffer and Lard Press. They actually pay for themselves.

Send your name and address with 4 cents in stamps for "The Enterprising Housekeeper"—a little booklet containing 200 recipes and kitchen helps, and also showing the many uses of the "Enterprise" Meat and Food Chopper. Address The Enterprise Manufacturing Company of Pa., Dept. 32, Philadelphia, Pa.

Latest! Special Offers, Page 2

YOU can't escape responsibility by ignoring the matter of educating your children. You don't want to. You think too much of them---besides you owe them an education. If you have one yourself you know why; if you haven't you know why a good deal better---we value most the things we haven't got: health, education.

You can render no greater service to your children, yourself, or the world, than to see to it that the world is made better by your having lived. You can't render a better service than by sending into the world educated men and women---your boys and girls.

We are teaching over nineteen, nearly twenty thousand pupils: old men and women, young men and women, and children; all by correspondence.

Over two hundred courses. You may want to brush up on some subject; mark it; we'll send full particulars, also bulletin of the most important educational movement of the day. But going back to your children; give us an idea of what they are most interested in; we'll suggest studies that under our masters will enable them to realize their ambition; our faculty is known all over the world. We pay tuition.

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Entered as second class matter in the postoffice at Lisbon, North Dakota.

PUBLISHED EVERY MONTH

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Lisbon, N. D.

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BUSINESS MANAGEMENT, LISBON, N. D.

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Vol. 12 JANUARY, 1911 No. 7

The influence of a good farm journal upon the boys should not be overlooked.

No man can expect uniformity in the offspring without judicious selection and mating of the parent stock.

It is not always the farmer who works the hardest, who prospers most, but the one who works to the best advantage.

Are you testing your seed for germinating qualities? It is a simple matter, and the State Experiment Station will send you full directions for doing it at home.

Colts that are fed high and grow fast need more exercise than those whose rations of grain are limited, and unless they get it they are apt to become weak, and defective in the legs.

If choice butter can be produced more easily in one way than in another and at less expense, that is the way to adopt, regardless of the fact that the same butter can be made in other ways.

By attention to these rules, you can increase your crop from 4 to 10 bushels per acre, with very little extra expense. Additional attention to cultural methods and soil fertilization will add further to the profits.

If you have any good seed grain, you should send a sample to your State Experiment Station, stating how much you have and the price you want for it. Your name will be listed and sent to those who ask for good seed.

BRAN BREAD

A friend, who has had considerable experience and who for years had been a sufferer from constipation, stated that by the use of bran bread, made in accordance with the following formula, he was able to discard the use of all medi-

cines in a short time, and found himself again in a normal condition. The recipe is as follows:

5 tablespoonfuls syrup.

1 1/2 teaspoonful soda.

1 cupful sweet milk.

1 cupful flour.

2 cupfuls bran.

1 teaspoonful salt.

Bake well in a moderate oven.

The writer has tried this bread and finds that it is very appetizing.

DURUM AND VELVET CHAFF VS. FIFE AND BLUESTEM WHEAT

Of late a great deal has been said with regard to the milling properties of Velvet Chaff and Durum wheats as compared with the so-called flinty wheats; also of the bread-producing qualities of the flour of the same. There are those that maintain that the discrimination against these wheats is unjust, or at least to the extent that a discrimination has been made in years past. It is a well-known fact that fife and bluestem were at one time condemned by the millers but now all this has been changed. In the Northwestern Miller for Dec. 21, there appeared an article by a Chicago correspondent, which contains the following significant statements:

"The discount wheats of years back, as turkey and flinty fife, become the premium wheats of today, and also notice, that the present discount wheats, as durum and velvet chaff, are becoming as necessary to the miller as the higher-priced fife and bluestem; so necessary, in fact, that if they were left out of the blend there would be a complaint of the flour.

"Consumers would hardly know what a straight bluestem patent was if such flour were tendered them, as they are, for the most part, now educated to use a blended flour, and I make no manner of doubt, if blue-stem ran out, millers would rise to the occasion and find a substitute, as in fact some have done already, using high gluten velvet chaff testing 16 to 17 per cent dry and 38 to 40 per cent wet gluten in place of deteriorated bluestem testing 15 to 15 1/2 per cent dry and 36 per cent wet gluten. I could give you any number of instances of profitable use of velvet chaff, turkey and durum in substitution."

PECULIARITIES OF THE LAW

One of the most scathing denunciations in the history of the courts is declared to have been delivered by a New York judge recently in sentencing a man and a woman who had been convicted of kidnapping. To the woman the judge

is reported to have said: "It is almost unbelievable that you could have held these broken-hearted children for twenty days, knowing the terrible suffering of their distracted parents. You have given birth to children; your own children lived in the very room in which little Guiseppe Longo was held a captive. You have neither the spirit nor the instinct of a mother. The God-made mother love is better shown in beasts than in you. The limit of punishment is not too severe for you." There was a gasp of astonishment in the court room, the dispatches say, when the judge pronounced the woman's sentence. It was such that if she lives to the end of her term of imprisonment she will be seventy-four years old.

Contrast this, if you please, with the procedure taken by the government against "nine tons of liquid canned eggs," recently seized in Jersey City. The stuff taken was described in the warrant on which seizure was effected as being "filthy, decomposed, putrid animal matter, unfit for human beings to consume." The limit of punishment under the pure food law, for making or selling stuff of this sort is a fine of five hundred dollars or imprisonment for one year, or both. And it is probable that not even this penalty will be imposed, imprisonment following convictions in food cases being comparatively rare. Yet here is an offense in consequence of which the lives of thousands of persons might have been endangered. It does not, as in the case of kidnapping, involve only a few persons; instead its effects are widespread and the damage done is of such a nature as to make it difficult to trace the author of the crime. The effects of the wrongdoing may manifest themselves in a thousand ways and in communities all the way from the Atlantic to the Pacific and from Canada to the Gulf.

There may be some question in the minds of legislators as to whether the food poisoner or the kidnapper is the worse offender, but it probably would not occur to any but legislators to solve the problem by making kidnapping the more serious crime. The chief consideration, doubtless, is that manufacturers of food products are frequently men of influence, whereas kidnappers belong a few steps further down, theoretically at least, in the social scale.—Woman's National Daily.

MILK, DURUM AND SUGGESTIONS

Poma, Calif.

Editor North Dakota Farmer:

Since my serious illness which has crippled me for life and made me as dependent on my nurse as an infant, I have been more or less of a "shut-in" and have been able to do very little

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MANUFACTURING
WHOLESALE
GROCERS,

ST. PAUL, MINN.

Main Offices:
CORNER THIRD AND BROADWAY

DR. PRICE'S
JELLY

DESSERT
NUTRITIOUS-WHOLESAME

One package, 10 cents, makes one
pint of wholesome Fruit Jelly. All
flavors from true fruits.

BE SURE TO ASK FOR

HIAWATHA or NOKOMIS

Brands

PURE FOOD PRODUCTS

Fruits, Vegetables, Spices, Extracts, Coffees, Teas,
Cereals, Sauces, Catsups, Syrup, Molasses, Starches,
Saleratus, Etc., Etc. These goods are the

BEST THAT SKILL AND MONEY CAN PRODUCE

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WHOLESALE GROCERS.

Manufacturers and Importers

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BRANCHES at Minot, N. D., Billings, Mont., Bozeman, Mont.,
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MONARCH BRAND



FOOD PRODUCTS

A GUARANTY OF PURITY. A WEL-
COME GUEST at every table where the
HOUSEWIFE demands the BEST. THE
MONARCH LABEL insures QUALITY in
Coffee, Catsup, Pickles, Maple Syrup, Canned
Goods or any article bearing the MONARCH
BRAND of REID MURDOCH & CO.,
CHICAGO.

ANOTHER PURE FOOD PRODUCT

CEREKOTA

Self-Rising

Pancake Flour

Is a Scientific Preparation of Healthful Appetizing Ingredients
and the Best Flour Milled in North Dakota

GUARANTEED Pure and Wholesome

Ask Your Grocer for a Trial Package

Bemmels Milling Company

Sole Manufacturers

Lisbon,

North Dakota

work. But I am getting stronger now and I can write a little.

I have read in a recent issue of the N. D. Farmer the matter relative to clean milk—and I want to pass my views on to you.

Twenty-five years ago I was manager for a New York house (Reed & Carnrick) and making a specialty of condensed, dessicated foods in which milk, gluten, etc., entered. I became justly interested in the milk problem—sanitary milk. All our milk was clarified, pumped by means of the milk separator. We would use no other.

I became interested in the separator deposits of manure, pus, colostrum (?) seeds and atmospheric detritus generally. I noted that the deposits from the winter milk were far more greatly charged with manure than the summer milk, etc.

Of course there were clean and filthy dairies and the separators told the tale and I always felt that milk should go thru this mechanical straining by precipitation. For many years I have held that at the farm the warm milk, fresh from the cow, should be at once cleansed by the hand separator that no milk should go to the market unclean,—in sense of being non-clarified by this process. Germs grow, multiply, "it is their nature too," when within a growing environment. I think every bit of foreign germ-carrying matter should be at once eliminated from milk and that the milk would be better off for it.

The circulars enclosed (under separate cover) which I have printed for circulation where they may be of the most good, tell my mind.

You see I am quite a helpless critter and I must look to others in matters like this for help and I know of no better place to go to than your dairy department. Why cannot a few experiments be made along the line of quantity, nature, etc., of milk separated (clarified) and non-separated. Same with cream, photos perhaps made of the deposits and a description of the germs and the power of the filth to hold germs and create fermentation generally. The comparative value of clarified milk as against dirty milk pasteurized.

I believe your college could do some work along these lines that would awaken the country to the value of clean milk and set the people—the mothers—demanding clean milk, and educate the mothers up to the fact that a farmer paid 3 or 5 cents per quart for his milk will and must make cleaner and better milk than the farmer who gets but 2 to 2½ cents per quart for his milk.

An educative campaign of this kind would mean much and I believe the average physician would prefer clarified milk from a certified herd to milk from

the same herd strained thru the milk can strainer and then pasteurized.

It's a live wire subject, this matter of clean milk and I do believe much good would come from a pamphlet, a bulletin issued by you upon this subject.

Durum Bread Day I see "has gone by the board" in the Dakotas. I am much amused over the perspicuity of the farmer of durum wheat when I reflect upon the results achieved by the California raisin producers thruout the whole country in connection with Raisin Day. The market has become stable and the price boosted because of the firm, strong demand for California raisins.

Well, durum now is just a matter of

kind and environment. The right strain of durum in the adapted soil means a bread flour that will, in years to come, command a premium just as does Kukanka in Russia today.

And. M. Wood (?) of the milling company (R—M) extols the semi-arid grown wheats as the great hard wheats. Secreatry Wilson says our great plains are to give us the future bread wheats.

You will see that I have the courage of my durum convictions. Were I, or could I be, a well man again I feel I could do something for durum wheat and its bettered market price that would amount to something.

Yours very truly,

Charles Cristadoro.

Livestock Department

PROF. W. B. RICHARDS, Editor

FARM AND STOCK NOTES

Judicious feeding by no means implies excessive feeding.

A well-trained horse is worth much more than one which is not.

The ration that only sustains life without growth is fed at a loss.

Nothing will spoil a spirited horse quicker than the whip and an ill-tempered driver.

To keep up with the times, you must advance steadily and all of the time.

When a hog is at a standstill there is a loss of food given and a loss of time.

A man's muscularity is not a sure sign of the amount or quality of the work he will do.

When the brood sow is fed only dry food she can hardly escape constipation and a feverish condition.

It is always better economy to purchase feed to carry stock thru than to allow them to run down in condition.

It is not safe to condemn a sow for bringing a small litter at first farrowing. She may do better ever after.

In nearly all cases it is better to mix the roughness, rather than to feed one kind entirely until used up and then start on the next.

Never use a sow for a breeder that is not a good milker; no matter how good her pigs are at farrowing they will become very indifferent by weaning time.

Keep a few good cows rather than a large number of inferior ones. Sell four or five of the poorest ones to the butcher and purchase a good one with the proceeds.

When introducing new animals on the farm, the new owner will find it to his interest to know how they have been raised, and if a change of treatment is desired to make such change gradually.

Study each individual cow and determine the condition of her appetite, for upon a good appetite depends to a large extent the amount of feed she will consume. Satisfy her appetite, but keep it keen.

While the individuality of the animals in consuming food and transforming it into butterfat is to be considered it should also be remembered that the kind, cost, and amount of food have much to do with the profit realized.

Many farmers keep only five or six cows, not enough to pay for hauling milk any great distance, but with the separator the cream is extracted from the milk and can be held for two or three days till enough is gathered to pay for delivery.

A new bulletin just issued by the Missouri State Board of Agriculture is entitled "Butchering Hogs on the Farm." This bulletin, in addition to dealing with butchering as ordinarily understood, tells how to make sugar-cured meat, mince meat, etc. It may be had free by addressing Secretary T. C. Wilson, Columbia, Mo.

PREVENTION OF ROUND WORMS IN SHEEP

In experiments conducted by the Bureau of Animal Industry of the Department of Agriculture, it was found that infection with nodular worms was entirely avoided by keeping the lambs and ewes separate in adjacent pastures, with a bare earth pen between into

which the lambs until weaned were frequently turned with the ewes for suckling, the animals being returned to their proper pasture after each suckling period. At the age of 12 months the weight of the lambs kept under these conditions averaged 82 pounds, which was 12 pounds more than the average weight of other lambs at 13 months which had occupied the same pasture as their mothers. The former, when killed at the age of about one year were found to be very slightly infested with stomach worms and hookworms and entirely free from infection with nodular worms, while of the latter some died at the age of 6 to 8 months heavily infested with stomach worms, and the survivors, when killed at the age of about 1 year, were all infested in a moderate degree.

In another experiment lambs and their mothers were kept together but changed at intervals to different pastures, and the lambs when weaned were placed finally in a pasture separate from the ewes. Their weight averaged 78 pounds, or 8 pounds more than that of the lambs which were kept with their mothers in one pasture without change.

For the past three or four years some of the livestock journals have recommended the feeding of tobacco to lambs to prevent round worms. Experiments made by the bureau showed that there was no appreciable difference in the condition of lambs which were fed tobacco and of those which were not, stomach worms being fully as common in the former as in the latter.

WATER FOR THE DAIRY COW

By H. F. McNatt, U. of Missouri

It is very important that the water drunk by the cows giving three or more gallons of milk daily be warmed to about 60 degrees F. Otherwise the cows will not drink as much as they need to keep up a good milk flow. It does not take much ice water to chill a thin-fleshed dairy cow thru and thru on a cold winter day, especially when she is compelled to walk some distance thru the snow or a cutting wind to get to the tank or pond.

Experiments made at the Missouri Station show that drinking water is needed in proportion to the milk yield. That is, a cow giving six gallons of milk a day, needs about twice as much water as a cow giving three gallons a day. If the water is too cold to be comfortable if drunk in large quantities, the cow will not drink enough and as a result, will drop considerably in her milk yield.

When Missouri Chief Josephine was giving about 100 pounds of milk each day last winter she drunk daily about

31 gallons of water. Imagine how she would have suffered if that had been ice water. It was warmed, however, and Josephine did not chill after drinking.

A good tank heater, or some other device should be used this winter to warm the water for the cows. It will pay.

DAIRYING AT THE TRI-STATE CONVENTION

Arrangements are made to give dairying a prominent place at the Tri-State Grain and Stock Growers' Convention held at Fargo, N. D., Jan. 17-20th, 1911. An excellent program on the evening of Jan. 18th will be given as follows:

"The Milking Machine," Mr. J. O. Perkins, Devils Lake, N. D.; Dairy Farm Methods and Their Relation to Quality in Manufactured Products"; Prof. C. Larson, Brookings, S. D.; "Dairy Sanitation"; Dr. J. W. Dunham, Fargo, N. D.

Provisions are made for an excellent display of dairy products as follows:

Creamery Butter. All butter in this exhibit will be entered in one class and buttermakers are urged to compete for the awards. First prize: "The Gardner Cup" by Gardner Hotel; second prize; Butter Trier.

Dairy Butter. It is desired that this exhibit be made as large as possible. All samples should be put in 3-pound jars and carefully marked with exhibitors' name and address. All butter not called for will be sold and proceeds returned to exhibitor. The following is a list of prizes:

First, The Forum Cup by Fargo Forum Pub. Co.; second, Milk Scales and Kimball's Dairy Farmer, 1 yr.; third, Mirror and Hoard's Dairyman, 1 year. fourth, 100-pounds flour and Kimball's Dairy Farmer, 1 yr.; fifth, Meat-Chopper and Hoard's Dairyman, 1 yr.

Junior Milk Exhibit. It is desired that this be made a special education exhibit. It is a new feature of the convention and a special effort should be made to secure a large number of entries. Each sample will be judged according to the score card used by the U. S. Department of Agriculture.

Rules

1. Any boy or girl under 16 years of age resident of Minnesota, South or North Dakota shall be eligible to compete for the prizes.

2. Each competitor shall be allowed to enter one sample (one pint) of milk to be scored.

How to Compete

Exhibitors should secure either the regular one pint milk bottles or Mason fruit jars and have them well sterilized before filling with milk.

The bottles should be sealed making

air tight, carefully packed in suitable box for shipment and filled about with sawdust or shavings to prevent breakage.

Each bottle should be plainly marked with sender's name and address, likewise the name should appear on the outside of the package to avoid any mistake in identifying.

Entry blanks should be obtained, filled out and returned before the entries close on Jan. 16.

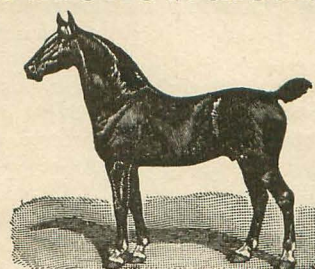
The following prizes so far as arranged are offered in this exhibit:

First, "The Fram Cup" by The Fram Pub. Co., Fargo, N. D.; second, Babcock Testing Outfit and Kimball's Dairy Farmer, 1 yr.; third, Milk and Its Products, Wing and Hoard's Dairyman, 1 yr.; fourth, Types and Breeds of Farm Animals, Plumb and Kimball's Dairy Farmer, 1 yr.; fifth, Picture and Hoard's Dairyman, 1 yr.; sixth, Lamp and Kimball's Dairy Farmer, 1 yr.; seventh, Hoard's Dairyman, 1 yr.; eighth, ninth and tenth, Kimball's Dairy Farmer.

The exhibits will be judged by Federal Asst. J. G. Winkjer and Dairy Commissioner, R. F. Pint and must be en-

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

Begin 1911 Right

Improve your stock

Aberdeen Angus Cattle

White Holland Turkeys

White Plymouth Rocks

EASTGATE BROS.

Willobank Farm Larimore, N. D.

IF YOU HAVE A \$ SEE PAGE 2

tered not later than Jan. 16. All entries for the various exhibits must be sent by express prepaid, to G. L. Martin, Dairy Dept., Agricultural College, North Dakota.

CONTAGIOUS ABORTION

By K. W. Stouder, Kansas Experiment

Station

Many terms are used in discussing this trouble, such as "slinking," "casting," "losing," "aborting," etc., the idea being conveyed that the young is cast out of the womb before it is fully developed and capable of separate existence.

Causes

Abortion may be brought about in many ways. The principal causes probably are injuries to the mother from fighting, falling, kicks from other animals, drinking excessively of very cold water, exposure to severe or sudden changes in the weather, and the eating of spoiled, frozen or moldy foods, especially wheat or rye, which contain ergot or smut. Improper hygienic surroundings also contribute, especially in stabling, breeding too young, inbreeding, and severe constitutional diseases. The death of the foetus itself is at times responsible.

When any of the accidental or explainable causes cannot be assigned to the case, contagious abortion is always to be suspected, for it is common in this state and easily spread from one animal to another. The failure of many mares and cows to breed may often be attributed to this trouble. The diseased animals are often able to infect those with which they associate, so it is readily seen that the immediate loss of the young animal is not the only loss sustained by a herd in which this disease may get a foothold. It frequently results in many months of sterility or possible loss of increase completely, as well as infection of new herds or animals replacing the old herd.

There can be no doubt of the fact that the disease is of germ origin, or infectious, as we more properly say. The fact that it spreads rapidly from one animal to another, and that, experimentally, it can be produced by the introduction of the discharge of an affected animal into the vagina of a pregnant animal, both conclusively prove this point.

The germs of the disease are found in the vagina and uterus of affected animals and are passed out with the discharge from these organs, therefore the membranes and discharges from a case of abortion should always be buried, *burned or thoroly covered* with strong and efficient disinfectant.

This is one disease where it is obvious

ST. PAUL UNION STOCKYARDS CO. REPORT

Comparison of Receipts and shipments of Livestock for December

Receipts						
Railroads	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P...	301	58	2161	239	.....	47
C. G. W.....	559	109	8372	201	23	129
C. M. & St. P.	2884	714	18437	3192	71	388
M. & St. L....	1352	300	12671	1125	.....	243
C.,St.P.M.&O	1774	309	22823	2505	4	410
C. B. & Q....	150	29	3063	451	.....	49
M.St.P.& S.S.M.	2580	892	9221	1188	7	210
Gt. Nor.....	5231	1689	20158	4611	6	477
Nor. Pac.....	3513	389	4770	10705	72	236
St. P.B.& T..	.....	.....	.....	.....	.....	.....
Driven In....	604	46	724	510	.....	.....
Total.....	18948	4535	102400	24727	183	2189
Increase.....	842	2296	38316	.....	49	480
Decrease.....	.....	.....	.....	10216	.....	.....
Jan. 1 to date	481722	121944	835886	864811	5482	34280
Increase.....	63093	43421	110466	368749	.....	6258
Decrease.....	.....	.....	.....	.....	150	.....
Average Wts.	787	166	211	94	.....	.....
Shipments						
C. R. I. & P...	491	.....	291	1254	15	33
C. G. W.....	2006	147	6	1391	.....	69
C. M. & St. P.	2723	310	26190	4886	2	344
M. & St. L. . .	465	6	.....	162	.....	16
C. St.P.M.& O.	2002	300	541	917	13	81
C. B. & Q.	992	25	253	1505	5	38
M.St.P.& S.S.M.	209	6	66	3282	1	26
Gt. Nor.....	263	1	726	487	20	20
Nor. Pac.....	198	65	98	354	69	19
St. P. B. & T..	.....	.....	.....	.....	.....	.....
Driven Out..	386	223	175	15	40	.....
Total.....	9735	1083	28346	14253	165	646
Increase.....	.....	519	17819	.....	.....	61
Decrease.....	1609	.....	.....	14325	61	.....
Jan. 1 to date	335848	33555	193849	688540	5820	16796
Increase.....	41592	5396	56869	340755	91	3471
Decrease.....	.....	.....	.....	.....	.....	.....

Comparison of the Origin and Disposition of Livestock for December

		Origin of Livestock Received				
States	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota....	11762	3717	73750	7054	22	1465
Wisconsin....	1176	455	11695	1733	9	204
Iowa.....	.....	2	1102	.....	50	19
Far South....	.....	.....	.....	.....	15	1
So. Dakota...	1268	92	8051	2401	12	169
No. Dakota..	3625	227	7802	4885	58	249
Montana.....	1117	52	.....	8654	17	82
Far West....	.....	.....	.....	.....	.....	.....
Manitoba & NWT....	.....	.....	.....	.....	.....	.....
Far East....	.....	.....	.....	.....	.....	.....
Returned....	.....	.....	.....	.....	.....	.....
Totals.....	18948	4535	102400	24727	183	2189
Disposition of Livestock						
S.St.Paul Pkrs	8920	3753	74056	11134	.....	.....
City & St. Butch	1309	216	1876	718	.....	63
Outside Pack'rs	163	263	24778	1013	.....	220
Minnesota....	1843	324	607	2084	99	84
Wiscousin....	884	53	.....	578	29	40
Iowa.....	2081	6	733	1219	2	78
Nebraska....	.....	.....	.....	.....	.....	.....
Kans. & Mo..	.....	.....	.....	.....	.....	.....
So. Dakota...	136	.....	.....	.....	1	5
No. Dakota..	12	.....	.....	5	.....	1
Mont. & West	28	.....	.....	.....	15	2
Far South....	.....	.....	.....	.....	.....	.....
Manitoba & NWT	.....	.....	.....	.....	.....	.....
Mich. & E.Can	73	.....	.....	.....	.....	2

that prevention is worth vastly more than an attempt to cure, mainly because the trouble is as a rule not suspected to be present till it has occurred, therefore treatment is directed to those animals supposed or known to be affected, and the known exposed ones, applying those sanitary measures necessary to check its spread.

Considerable experimental work has been done in attempting to control the disease and various methods have been more or less successful in herds that were affected in a mild form. This Station carried on a series of experiments by using locally, at various periods of time, capsules filled with ichthyol and other disinfectants. Also giving salol internally. None of these methods proved as satisfactory in controlling the disease as the following:

Treatment

Burn the fœtus and membranes, together with all litter soiled with the fluids. Clean out the barn and burn the refuse. Whitewash the walls with spray or brush with a solution of corrosive sublimate, one ounce in eight gallons of water and lime. Repeat this process often and get all drains and floors well covered with the antiseptic fluids.

Separate aborting animals from those supposed not to be affected and keep them separate until they are entirely well. Wash off the tail and surrounding parts of all animals with a solution of creolin or phenol, two per cent in water, and irrigate the uterus with a two per cent solution of phenol in water kept thoroly mixed. This is best performed by using a funnel and hose five or six feet long, inserting one end in the uterus, and pouring the antiseptic solution into the funnel, allowing it to run in gradually.

Many animals, even those which have persistently refused to breed, can be made profitable breeding animals again by the following method:

Boil and cool one quart of soft water. Add to it five drams of pure crystals of phenol. Keep this solution in a well corked, sterilized bottle, shaking it vigorously each time before using any of it. Get a hypodermic syringe, similar to those used in vaccinating for black-leg, and treat the affected animals by injecting under the skin about one to one and one-half ounces of this solution, putting one to two drams at different points of the body. Repeat every seven to ten days till about six treatments are given. After about two treatments, increase the dose to all the animal will stand. To do this, give one or two extra syringes full and wait a little while, all the time watching the eyes. If the pupil dilates, enough has been given. An overdose makes some animals quite sleepy, or they stagger a

Chicago.....	1279	157	99	8636	.....	85
Ills.(ex Chicago	1704	84	253	.....	19	59
Eastern Points	223	.....	.....	.....	.....	7
Returned....	.....	.....	.....	.....	.....	.....
Totals.....	9735	1083	28346	14253	165	646

little, but these symptoms are not dangerous and soon wear off. To give all the animal will stand without staggering is good practice after about the second treatment.

If any of the animals show signs of aborting at any time, give two to four drams every day for a time and it will probably check the tendency. To herds suspected of possible trouble, thoroly mix one pound of phenol with five pounds of salt, and give to each animal a tablespoonful of the mixture in a bran mash every other day for a week. This will probably prevent the threatened abortion.

Bulls which have served aborting cows can spread the disease, so the sheath should be irrigated before and after each service, the same as was directed for the irrigation of the vagina in the female. The bulls should also be given the hypodermic treatment and should be isolated and kept from associating with herds wherein the disease has not been found.

Some cows and mares have repeated-

ly failed to conceive after service, and this condition is often due to an acidity of the fluids of the uterus which prevents conception. This difficulty is best overcome by soaking a cake of ordinary yeast in about a quart of lukewarm water over night, keeping it at about body temperature all the time; this solution should be strained thru a clean muslin cloth and injected into the vagina of an animal a few hours before service. It neutralizes the acids and overcomes the trouble in many cases.



\$100

SAVES HIM!

Cure your horse of any Spavin, Curb, Splint, Ringbone, Bony growth or Lameness with a \$1.00 bottle of

KENDALL'S SPAVIN CURE

In use over forty years. What one man says: "I have cured 3 Spavins with Kendall's Spavin Cure, and think it is an excellent remedy." Yours truly, W. Stricker, Florence, S. D.

For sale at all druggists, \$1.00 per bottle. 6 for \$5. Keep it on hand. Ask druggist for "Treatise on the Horse," or write to

Dr. B. J. Kendall Co., Enosburg Falls, Vt.

CENTRE--LANE STOCK FARM

BREEDER OF: Black Percheron and Hambletonian Horses, Red Polled Cattle, Poland China Hogs, White P. R. Chickens, White Holland Turkeys, White Embden Geese, White Pekin Ducks and White Guinea Fowls.

GROWER OF: Minnesota No. 169, Spring Wheat, Swedish Select Oats, White Hulless and Success Beardless Barley, Turkey Red Winter Wheat, N. D. 959 Winter Rye, Northwestern Dent Corn, Early Ohio Potatoes, Timothy and Alfalfa.

Young Stock and Pure Seed, for sale. Write me for particulars.

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THE ENVILLA STOCK FARM

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SHETLAND PONIES. 100 fine ones. Your own price.

REGISTERED ANGUS CATTLE. 25 must be sold.

HEAVY DRAFT STALLIONS, MARES, AND SPANISH JACKS.

WOLF AND FOX HOUNDS that will catch and kill.

PET STOCK OF ALL KINDS. PURE BRED POULTRY, all varieties.

We can please you both in Quality and Price

L. H. WHITE, Prop.

COGSWELL, N. D.

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Why not send for special rates at once

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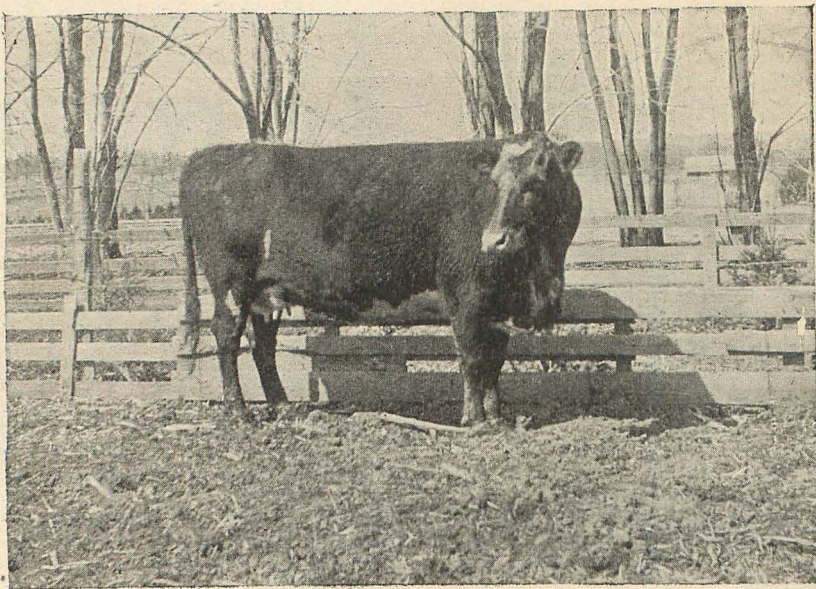
THE DUAL PURPOSE COW

A great deal has been and is being written, says Breeders' Gazette, about the dual purpose and special purpose cow. Each has her place.

The more any part or function of an animal is developed the more delicate the animal becomes, the better care it needs, the better feed it requires. The highly developed beef animal or dairy animal is unbalanced from the standpoint of nature, and nature left to herself does not produce them. When

and fine care, yet it can get along without these better than can the highly specialized animal. They are also less liable to disease so that they should prove the animal for the farmer to raise who does not feel that he can give as much time and attention to his stock as the best kind of stock might require. Whether this is profitable or not is another question, the point at issue is what a man is going to do, and this he will likely do to quite an extent regardless of profits.

The matter of securing the dual purpose cow is getting more difficult as



"This Animal is from the Standpoint of Nature Well-Balanced."

man produced them nature leaves it for man to care for, feed them and provide the conditions necessary for maintaining this unbalanced creature. When these highly specialized animals are given the requisite feed, shelter and care they serve man's wants much better than the animal nature made—in fact one of them will do the work of a dozen or more of nature's kind. And they are the profitable animal to raise, providing all their wants can be satisfied. If, however, they cannot be given the proper care the less highly specialized animal may be more profitable. That is the place that the dual purpose cow fills. This animal is from the standpoint of nature, quite well balanced. The fleshing properties are not so extremely developed, nor its milk making carried to so high a degree. Here is a cow that can be a fairly good milker—sometimes they are record breakers—and at the same time have good fleshing properties so that a steer from her would make a fairly good beef animal, and sometimes they are prize winners.

The dual purpose animal while it will respond to the best feed, good stabling

nearly all cattle have now some strains of either the dairy blood or that of the beef lines in their make-up; so that they will not transmit true to type, and none of the pure breeds are strictly dual purpose; some were at one time, as some strains of the Shorthorn and they persist yet in England, but where can they be had in this country in a sufficient number so as to in any way satisfy the needs of farmers who might want them. The Red Polls are being bred more and more to beef. It seems, however, that lately more attention is being given to breeding for dual purpose type so that it may be easier in the course of a few years to secure such animals than it is at present.

HOLSTEIN CATTLE

THE MOST PROFITABLE DAIRY BREED

Illustrated Descriptive Booklets Free
HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA
F. L. HOUGHTON, Secy, BOX 135, BRATTLEBORO, VT.

Alden, Minn. August 3, '09.
DR. B. J. KENDALL CO.,
Gentlemen:—Please send me your Treatise on the Horse. I have used Kendall's Spavin Cure for many years, and find it the best remedy money can buy.

Yours truly,
Tom Narverud.

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One Cent a Word

Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. TRY IT HERE.

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HORSES

FOR SALE

Percheron, Belgian and Shire horses
J. W. & F. T. PETERSON, Litchfield, Minn.

MEADOWBROOK STOCK FARM. Clydesdales and Shetland Ponies, imported and home bred. Prices reasonable and terms to suit. Write or come and see me. GEORGE LANG, Mapleton, Minn.

CATTLE

Aged and young Jersey bulls also heifers for sale—thoroughbred and registered. Write for particulars. C. E. BATCHELLER, Fingal, N. D.

North Branch Stock Farm. High class Shorthorns. Herd, bull, Supreme Judge 177722—pure Scotch. John Donnelly, Grafton, N. D.

FOR SALE

GALLOWAY CATTLE

J. W. & F. T. PETERSON, Litchfield, Minn.

SWINE

POLAND CHINA PIGS, also Shropshire sheep. Seed grain. GEO. N. SMITH, Amenia, N. D.

EGGS AND POULTRY

EGGS FOR HATCHING. Express prepaid, \$2 per 15, from pure bred Golden Wyandottes and White Plymouth Rocks (Fishels strain.) Choice stock for sale. Send for Catalog. C. H. McGEE, Oriska, N. D.

MISCELLANEOUS

Envilla Stock Farm, Cogswell N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf and Fox Hounds, Pure Bred Poultry, Pet Stock. Write them.

FAIRVIEW STOCK FARM. Breeder of Short Horn Cattle, Mammoth Bronze Turkeys and B. P. Rock Chickens. Young Stock for Sale. F. R. HAMMOND, Prop., Bismarck, N. D.

FOR SALE Six farms, joining, 6 miles from Bowbells, will be cheap. Write for particulars. The Lyon Land and Loan Co., Bowbells, N. D.

100 Tons of Hay, 300 Cockerals and Tom Turkeys—choice ones. Buy now—special prices. Envilla Stock Farm, Cogswell, North Dakota

FOR SALE-MISCELLANEOUS Private Sacrifice Sale

All my Household goods, etc., at Half Price. Everything practically new. One set each (20 volumes each) "CLASSIC TALES BY FAHOUS AUTHORS" and "MAKERS OF HISTORY," my fine Upright Piano and Piano Player, Phonograph and records, Fireless Cooker, Camera and variety of furniture. Must be sold. You never had a better chance for bargains. Write today.

E. R. WHITNEY
Cleveland, O. 1501 Columbus Rd. Box 804

RED-POLLED AND GALLOWAYS

Shropshire Bucks

J. S. BIXBY, - - LISBON, N. D.

FISH'S NORTH DAKOTA TOMATO, bred in and for our climate. Unsurpassed in earliness and quality. Good size, Profitable. 100 seeds 25 cents.

S. E. FISH, VALLEY CITY, N. D.

Poultry Department

Geo. Hausmann, Hillsboro, N. D.

THE POULTRY YARD

Warm wheat for breakfast makes the biddies shell out the eggs.

Plenty of bone all the time. If you haven't a cutter use an old ax or a hatchet, but break the bone in small pieces.

Unfertilized eggs taken from the incubator need not be an entire loss. They may be boiled and used as chick food.

Pigeon-grass is becoming widely distributed in the East. The seed has much nutritive value and is fine for turkeys and chickens.

Takes more to fat a hen now than it did two months ago, but don't winter the hens that are so old they may die before spring. Feed them well, keep them warm and let them go the first chance you have.

Green food must not be forgotten. Some feed green rye when it can be had, others give sprouted oats, others beets and turnips and cabbage, and others add cut clover hay to the mash. All of the greens mentioned are good.

Salt is as essential for poultry as for human beings or animals. But it is not wise to feed it by itself. The better way is to season the food whenever that can be done. The warm mash in the winter gives an excellent opportunity to supply it.

A little more corn may be added to the evening grain ration, as the hens will need more heating food. On the farm of the writer the winter grain ration consists of two parts whole corn, one part oats, and one part wheat. During the summer only one part corn is given to two parts oats and one part wheat.

If porcelain eggs are used for nest eggs in cold weather, cover them with light flannel, or some other material, to avoid torture to the hens. An artificial egg is always of the same temperature as the atmosphere, while the temperature of a hen's body is about 102 degrees. It may readily be seen that in freezing weather these ice-cold eggs will cause the hens to get chilled.—Farm Journal.

DUCK RAISING IS VERY PROFITABLE

A great many people in this country have made comfortable fortunes by breeding them for the market. Many duck farmers claim that duck raising is more profitable than any other branch of the industry. Ducks are very easy to raise as the young are very hardy and the old ones never have such diseases as roup or other parasitic diseases. Lice

never trouble ducks and they live and grow rapidly on cheap food. For market purposes the Pekin Duck is recognized as being the best. While for eggs "The Indian Runner" is making more friends all of the time.

From the day they were first introduced into this country down to the present time they have added to their reputation as the best laying fowls of any breed ever introduced to the poultrymen of any country. They are not so large as the Pekin, but the meat is very finely flavored, and is more sweet than that of any other water fowl. It is as egg machines that they are most highly estimated. They lay a large white egg. These eggs are of the finest flavor and sell in the market for more than hens' eggs. These ducks have been called "The leghorns of the duck family" because of their great egg production.

They generally average 200 or more eggs in a year. They lay at all seasons and produce eggs late in the fall when the hens are moulting. They are the best kind of foragers. They endure confinement well and are small eaters. I find it is best to keep them in flocks of twenty-five. Small coops answer for housing. All duck farms are found in the East. There are hundreds of farms where nothing is raised except ducks. The breeding of ducks would no doubt be as profitable in the West as it is in the East, but no one seems to take the work up. Now that the Indian Runner ducks are becoming recognized as the very best layers among all our fowls. I look for many large duck farms in the west.

Ducks do not need water except to drink, and this should always be supplied while they are eating, as they like to eat a few bites and then take a swallow of water. They should be fed soft food.

PURE-BRED POULTRY

The average poultry raiser who has never had pure bred poultry in his yard looks upon such as if there was something mysterious about them. They see them at the fairs, poultry shows, etc. I have often overheard some of them say, "Oh, well they are all right to look at." I have often thought that they would be of little value to those who think that fowls ought to obtain their own living during the winter and still lay eggs.

Pure-bred poultry are what they are largely because of the feed and care they receive. We might breed the best strains of any breed for years and pay

50 Best Paying Varieties Pure-Bred Chickens, Ducks, Geese, Turkeys, Eggs, Dogs and Incubators. All at Low Prices. Send 4c. for my Book which gives reliable information worth many dollars to you **W. A. WEBER, Box 926 Mankato, Minn.**



BARRED ROCKS

Choice Stock and Fair Treatment.

ROBERT B. REED

Box 2.

Amenia, N. D.

White Crested Black Polish Chickens, Eggs \$3.50 for 15, Chicks \$7.50 a pair.

J. R. POLLOCK, Casselton, N. D.

Silver Wyandotte

COCKERELS \$1.00 each

Wyandotte Farm, Woods, N. D.

Partridge Wyandottes

"Hardi-breds," A breed

which combines good laying quality with the finest table quality, to say nothing of unexcelled beauty.

My birds are from the Hadaway flock direct and among them is a son of "Boston". They are blocky, well marked and of trap-nested ancestry.

Some stock for sale at reasonable prices. Eggs: \$3 per 15 or \$5 per 30. Cash with order.

GEO. J. CHILDS, Casselton, N. D.

HAUSMANN POULTRY FARM

Breeders of W. Wyandottes and S. C. W. Leghorns Hillsboro, - North Dakota

EGGS for hatching from 26 leading varieties. Bronze and W. Holland Turkeys, Pekin ducks and chickens. Catalog free. **L. GULDEN, OSAKIS, MINN.**

MAMMOTH BRONZE TURKEYS

I have a few very fine toms for sale yet.

JOHN F. SIMON, Oberon, N. D.

MAMMOTH BRONZE TURKEYS

from winning stock
EDGEWOOD FARM, R. F. D. 2, Fargo, N. D.

S. C. W. LEGHORNS

Prize winners' stock for sale. Eggs a specialty. **GEO. A. FOWLER,**
Box 486, Casselton, N. D.

Rose Comb Black Minorcas

Eggs for sale, \$2 for 15 eggs.
C. WYSH, CASSELTON, N. D.

Thirty Prizes At State Show

White Barred and Buffed Rocks. First on Pens of these Farmers' Favorites. White and Buff Wyandottes Eggs from Price Pens \$2.00 per 13.

H. P. COOPER, Casselton.

A Representative Wanted

We want a live young man in every county in North Dakota.

Write us for terms quick.

NORTH DAKOTA FARMER

LISBON, N. D.

the best attention to the mating of the fowls yet if we give no thought to feeding no progress would be made.

Feed is needed to develop fowls. Something more than feed and care is needed. We must give the right kind of feed. It must supply the needs of the fowls—the purpose for which it is kept. To utilize its feed for the purpose it is supposed to use it, is the underlying principle that distinguishes pure-bred from a mongrel that has not been bred for any particular purpose.

Reader what object have you in view with your flock of poultry?

No department of animal industry affords more study and calls for more discrimination and care in feeding and mating than that of poultry. It is an endless, ever new, varying, always interesting study. One variety alone will keep any one busy trying to produce specimens near the standard requirements and improving the utility qualities of the birds at the same time.

Without cleanliness there can be no success in the poultry business. One may attend diligently to all other matters in the raising of chickens, but if we fail here all of our other care and industry will count for nothing. Many get intimately acquainted with several millions of poultry mites which have taken up quarters in their poultry houses, and levy upon their hens for subsistence. Raising chickens requires intelligence, watchfulness, patience, and the grace of being everlasting at it. I do not mean that one must be in the poultry yard all of the time, or even a great deal of the time. I mean that we can afford to have some intelligently arranged plan about our chicken business and that we cannot afford not to carry it out. I know of no other branch of livestock that there is more profit in than chickens.

The one who thinks it is a small business, is not in possession of the facts about it. It pays well to have good stock and to take good care of it. If chicken-raising is not profitable to any one it is very likely because he allows it to go at haphazard. Why not put method and skill into it as into other stock raising.

SOME DISEASES AND SIMPLE TREATMENT

By Mrs. B. F. Wilcoxon

In pneumonia there is difficult breathing, wheezing and coughing, fever and loss of appetite. Keep birds in a dry place. Give salts, allow the fowl to inhale the fumes of burning sulphur or tar. I have found the tar treatment to be the best. Do not allow too dense fumes or you will strangle your fowls.

I often burn tar among the whole flock, often before the disease is made manifest. I often had to do this while living in Iowa but never in Wyoming. I find that poultry are a great deal healthier in this western climate. (I have no land to sell)

In cases of cholera kill all sick birds; bury deep, disinfect premises, give fowls salts and keep a good tonic in the drinking water. If the fowls refuse to drink the water it may be mixed in the food. Sulphuric acid, one teaspoonful to one gallon of sweet milk is good in cases of cholera and roup.

Scaly legs is caused by a parasitic mite which burrows under the scales which causes a rapid increase. Scaly legs is transmissible from one fowl to another; grease the legs with kerosene and lard or carbolated vaseline. Body mange is caused by a mite; fowls lose feathers, especially about the neck and head. An application of carbolated vasoline gives good results.

Fowls that have worms may be relieved by giving 15 drops of turpentine in one teaspoonful of castor oil. I often mix a little turpentine in the feed and use as an occasional feed.

"Going light" is not always a case of tuberculosis. If you will hold a post-mortem examination in cases of tuberculosis you will find the liver and intestines filled with yellowish cheesy lumps varying in size. Isolate the birds; better still, destroy them; disinfect the premises.

Chicken pox or sore head is a contagious disease. Sores cover the head; the bird grows thin and weak. The parasite causing it penetrates the skin. The disease is more prevalent during warm damp weather. Keep the house

clean and dry. Sick birds may be treated by applying carbolic ointment.

I have found a spray pump a great help with which to spray the hen-houses and coops. I have found it beneficial to spray large quantities of kerosene where the chicks and fowls roost.

We must profit by experience and avoid making the same mistake twice. Let every breeder strive thru the winter to learn more about poultry culture and let us all resolve to raise more chickens next season than we ever have before.

WHERE TURKEYS SHOULD ROOST IN WINTER

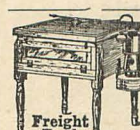
Many turkeys have been actually spoiled by being penned in close warm, houses in the winter. They are intended by nature to live out doors and an outdoor life, or a close approximation to it, is what they must have for good health and vigor. In ordinary weather of winter, even in the Northern latitudes, they roost out of doors with comfort. For severe weather, especially when storms are raging, a shed open to the south should be provided and equipped with a roost well up toward the roof, but back from the front and open side. If the snow blows in, a curtain of burlap or cotton may be let down to cover the open front. In such a place the flock will be comfortable, happy and healthy.



ALBERTA \$9.90 buys best 245 egg incubator.

\$6.65 buys best 245 Chick Brooder. This high grade hatcher is the result of our many years' successful construction and operation of them. Has heavy double walls, double glass doors, best hot water copper tank, safety lamp, nursery and self regulator complete for operation. Guaranteed and long trial. Write for free catalog. If in a hurry send price to save time.

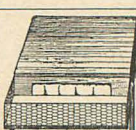
Alberta Incubator Co. Box 890 Mankato, Minn.

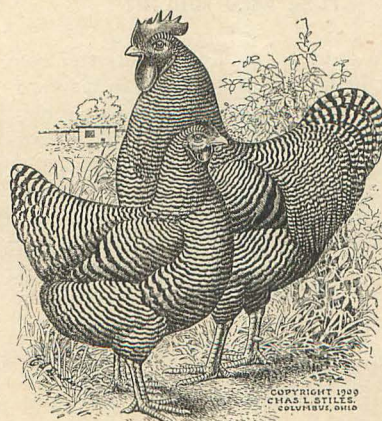


125 Egg Incubator and Brooder Both For \$10

Why pay more than our price? If ordered together we send both machines for \$10.00 and pay all the freight charges. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery underneath the egg-tray. Both Incubator and Brooder shipped complete, with thermometers, lamps, egg-testers—all ready to use when you receive them. All machines guaranteed. Incubators are finished in natural colors showing the high grade lumber used—no paint to cover inferior material. If you will compare our machines with others offered at anywhere near our price, we will feel sure of your order. Don't buy until you do this—you'll save money. It pays to investigate the "Wisconsin" before you buy. Send for the free catalog today, or send in your order and save time.

WISCONSIN INCUBATOR CO., Box 68, Racine, Wis.





Harty's Barred and White Rocks

100 Choice Birds for sale.

Prices on single Birds or Pens on application.

H. C. HARTY,

Bottineau, North Dakota

Seeds, Trees and Gardens

C. B. Waldron, N. D. A. C., Editor.

SEED GRAIN SUGGESTIONS

Have you any choice seed grain for sale, or will you need seed?

If you need good seed, ask the State Experiment Station where to get it and what it will cost:

If you produce your own seed grain, it is important to select it early out of the best part of the crop and take good care of it.

experiment, unless your State Experiment Station recommends them. You cannot afford to take the chances. Let the Experiment Station do the testing of new varieties and learn the results from them.

Whenever smut appears, treat the seed grain with formalin solution. Get the formula and method from the State Experiment Station. The treatment is very simple and effective.



Some do Prefer this to the Open Prairie.

You should never fail to use a good fanning mill, selecting only the heaviest and plumpest kernels of good body for sowing, and avoid planting shriveled and dwarfed kernels. Wheat, oats, barley and rye seed may be best prepared by fanning mills, which separate by size and by weight, by means of screens and wind blast. A good fanning mill, properly used, will more than pay for itself in a single season.

If your seed appears to be mixed or falling off in yield, it will pay you to get pure bred seed of the best strain adapted to your soil and climate. If you have any doubt as to what varieties to plant, write the State Experiment Station and ask them which will do best in your soil and climate.

Do not waste your time in sowing new varieties (except on a small tract as an

A CROP FOR OUR SANDY LANDS

By Victor Trempleau

The adaptability and hardihood of some trees has suggested a use for our sandy lands that promises to make them profitable.

A German forester in America, seeing the cypress tree of the southern swamps growing in water, said at once: "This tree may thrive on dry land in arid regions."

"Why do you think so?"

"Because, a tree that can thrive under difficulties of one kind is very apt to bear hardships of another sort."

He was right. The cypress thrives also on dry, porous, prairie lands in the south.

Again, the black spruce, the hardiest tree for the variable climate of the high mountain summits of the Appalachians,

is also the hardiest on the muskegs of the northern states and "the silence places" of the Hudson bay region.

The red cedar also, at home on the dry limestone ledges of New England and



16 CENT SEED SALE

10,000 KERNELS OF Selected FERTILE SEEDS for 16c

1500 Lettuce	1000 Celery
1000 Onion	100 Parsley
1000 Radish	1500 Rutabaga
100 Tomato	1000 Carrot
1500 Turnip	100 Melon
1200 Brilliant Flower Seeds, 50 sorts	

Any one of these packages is worth the price we ask for the whole 10,000 kernels to start with. It is merely our way of letting you test our seed—proving to you how mighty good they are.

Send 16 cents in stamps to-day and we will send you this great collection of seeds by return mail. We'll also mail you absolutely free our great catalog for 1911—all postpaid.

JOHN A. SALZER SEED CO.,
215 South 8th Street, LaCrosse, Wis.

Strawberries From Seed

RIPE FRUIT IN 4 MONTHS

This Wonderful Everbearing Strawberry is a great curiosity. It grows rapidly, and will begin to fruit in about 4 months after sowing seeds, and continues to bear fruit constantly all summer and fall, ½ pint of berries having been picked from one plant as late as October. Seeds sown in the house in winter will produce early fruiting plants which will bear until late in fall, and if taken in the house will fruit all winter. Plants perfectly hardy everywhere.

For only 10c we will send 100 Everbearing Strawberry Seeds in a 10c Rebate Envelope and when empty envelope will be accepted as 10c payment on any order for seeds in our 1911 Catalogue, which is included Free.

SMITH BROS. SEED CO., Box 637, AUBURN, N. Y.

Grows From Seed

FOUR MONTHS FROM PLANTING

A few Ground Almonds (Chufa) growing in your garden this year will give you a great deal of pleasure. Plant in Spring and you will get a crop in about four months. The nut is of fine flavor, resembling the coconut or almond; meat is snow white; shell thin, and great producer. One nut planted will produce from 100 to 200 nuts. Will grow in any soil or location. To get new customers to test our seeds we will mail 50 Ground Almond nuts and 1911 Seed Catalogue with 10c. Due Bill, all for 10 cents. Send to-day and have something in your garden to surprise your neighbors.

MILLS SEED CO., Box 600, Washington, Iowa.

10,000 SEEDS 10c.

We want you to try our Prize Seeds this year and have selected 50 best varieties and put up 10,000 seeds especially to grow. Prize Vegetables and Flowers. They will produce more than \$25. worth of Vegetables and 10 bushels of Flowers.

800 Seeds Cabbage	3 Best Varieties	3 pkts.
2,600 " Lettuce	4 " "	4 "
800 " Onion	2 " "	2 "
1,000 " Radish	4 " "	4 "
300 " Tomato	3 " "	3 "
2,000 " Turnip	4 " "	4 "
2,500 " Flowers	30 Grand Flowering Varieties	

In all 10,000 Seeds, and our new Seed Book with a 10c Credit Check good for 10c selection, postpaid, 10c. FAIRVIEW SEED FARMS, Box 122, Syracuse, N. Y.



APPLE TREES Direct to you at Wholesale Prices—6 to 20c each. The hardiest, most productive, Northwestern varieties—all No. 1 trees with perfect fibrous root system. We grow them by the millions—No agents employed. Everything in Fruit and Shade Trees, Evergreens, Roses, Flowering plants & Shrubs at wholesale prices. Write for Catalog.

Farmer Seed & Nursery Co.
Station 8 FARIBAULT, MINN.

the red, sun baked clays of the south, is able to endure the extremes of heat and cold, and, too, the drouths of the western plains.

Another tree of sturdy stock and a very rapid grower is now attracting attention. On the recently glaciated and raw, almost entirely mineral soils of Labrador and westward to Minnesota, the gray or jack pine delights to show its vitality by colonizing the gravelly kames and eskars formed by the glaciers and the sandy flood plains of the post-glacial streams. These are lands that have little or no black soil or humus and that are exposed to strong winds, and on them the jack pine finds its favorite home.

This hardy pioneer of the north has been tried on the drifting sands of Europe and the sand dunes of the New England coast with eminent success, and a few years ago a few trees of this species were, as an experiment by the government, planted in sod on the sandy prairies of Nebraska.

This little pilgrim colony at once established itself, made rapid growth and stands in Holt county, Nebraska, today, delighted with its opportunities in the broad expanse of prairie about it, which it is resolutely beginning to occupy by bearing seed and sending out seedlings from the original group.

During the last season the writer saw this tree in its native haunts in Minnesota. On the sandy plains in the region of the upper Mississippi, the St. Croix and the St. Louis rivers, mile after mile was traveled under its fragrant shade, cheerful with the chatter of the pine squirrel, the drumming of the partridge, the fruit of the blueberry and the flavor of the wintergreen. From the prairies of southern and western Minnesota and the Dakotas come the young men in winter, compensated somewhat to gain the shelter of the woods while losing that of the home, and cut cordwood, fencing poles, railway ties and saw logs.

The surplus cordwood and poles are shipped hundreds of miles to the treeless prairies. The railway ties are sold to the railway companies at the nearest station and the saw logs go down the rivers to Minneapolis, Stillwater and Cloquet.

A visit to the great iron mines of the Mesaba range revealed another use for this jack pine in the mines, where large amounts are used for props and other timbers.

Climbing to the summit of the Mesaba range this tree was found on the exposed rocky ridges, commonly 100 feet high, and as much as two feet in diameter.

Deficient in beauty as compared with other evergreens of the regions, it seems devoted to a life of usefulness, filling the waste places with timber, shading and sheltering the bleak hills and plains



Yours FREE 30 Days

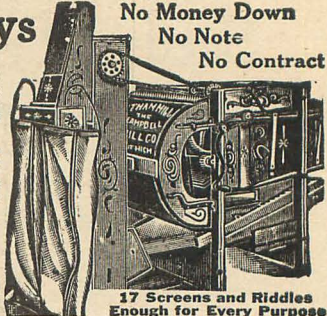
I'll Pay Freight Anywhere

Just let me send my Chatham Fanning Mill to your R. R. Station on a month's trial. No money, no contract and I pay the freight. Return at my expense or keep it and take a year to pay me. Just let me prove the money you can make with a

CHATHAM FANNING MILL and Seed Grader

Cleans and grades all kinds of seeds, grasses and grains. Don't grow weeds or thin stands. Land and taxes are too high. Double the crops, get better crops and have high-priced seed to sell. Send postal now for my factory price, liberal terms, and get FREE BOOK No. 198. Tells how thousands are making big, extra profits with a Chatham. Send your name by next mail. Address Manson Campbell, Pres.,

MANSON CAMPBELL CO., Detroit, Mich.
Kansas City, Mo.; St. Paul, Minn.; Seattle, Wash.



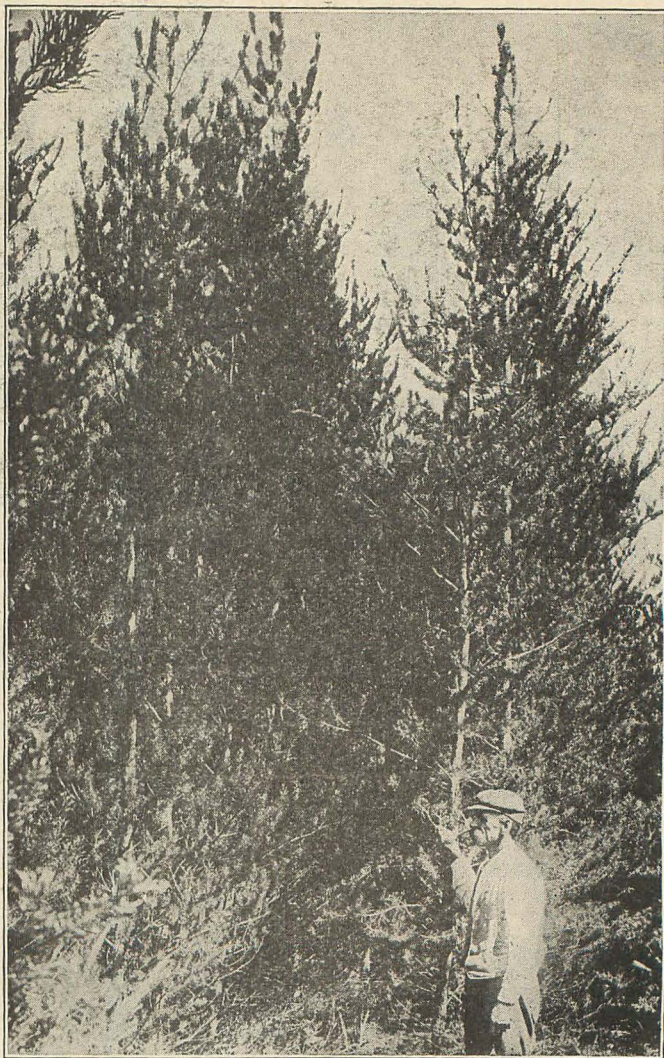
No Money Down
No Note
No Contract

17 Screens and Riddles
Enough for Every Purpose

JACK PINE PLANTATION

(Pinus divaricata)

This photo shows part of the experimental plantation designed and established by B. E. Fernow when chief of the Forestry Division, U. S. Department of Agriculture. Many different species were planted, but Jack Pine did best of all.



This plantation is on very sandy land, where the sand drifts when sod is broken. The plants, when set, were seedlings about 10 inches high. They were supplied by

H. B. AYERS, of Kimberly, Minn.,
who now has a nursery devoted exclusively to the propagation of Jack Pine for prairie planting.

and rendering them habitable, attractive and valuable by its hardy virtues.

The successful transplanting of this tree to Nebraska promises much for the future of the state.

SCHEDULE OF INSTITUTES FOR N. D.

Mayville, January 23.

Lakota, January 26.

Towner, January 28.

Dickinson, January 31 and February 1

Minot, February 3 and 4.

Grand Forks, February 7, 8 and 9.

WINTER KILLING OF TREES AND ITS PREVENTION

It is commonly supposed that if trees are given a sufficiently moist soil during their growing period that their winter condition in this respect is a matter of little importance.

As a matter of fact trees are giving off moisture at all seasons of the year tho to a much less extent, of course, in cold weather. During the warm sunny days in winter there is a considerable loss of moisture thru the twigs and except in very severe weather the roots are able to furnish this loss tho the soil about them be frozen. The ability to do this is naturally less if the soil be dry or frozen very hard. In that case the loss of moisture results in a more or less complete drying up of the tissues of the plant and this often results in the death of the tree.

What is known as root killing may in some instances be due to the immature or unripe condition of the plant when winter begins, but in most cases root killing follows dry seasons like the one just closing.

If the soil has been kept moist by cultivation or mulching the trees are safe but if the soil is dry it should be thoroly wet before freezing and then mulched with old straw, chaff or stable manure to prevent drying out.

The mulch delays freezing and this in itself is an important item, as it is the long continued frozen state of woody plants that injures them to a fatal degree.

A moist soil then kept in an unfrozen condition as long as possible is the surest means to prevent winter killing of trees. In a season like this root killing is very likely to occur.

SEED FOR SALE

Pure Minnesota No. 163, Hard Wheat and No. 161 Bluestem, and North Dakota Agr. No. 155 Flax. \$1.75 per bushel including bags, for wheat and \$3.25 per bushel for flax. Sample, 4 cents. H. EDLUND, Fertile, Minn.

WHAT 10c BRINGS YOU---P. 26

Kill All Gophers Quick and Save Big Profits—



Get a box of Mickelson's Kill-Em-Quick Gopher Poison from your dealer at once. Try it according to the simple directions. If it isn't satisfactory—if it doesn't rid your fields of gophers—get every cent of your money back promptly.

But you'll find, like other progressive farmers, that there's no bigger money-saver than Kill-Em-Quick. Each gopher costs you 10 cents. There are 500 to 1000 in a 40-acre field. And a \$1.25 box of Kill-Em-Quick actually kills 4,000 gophers. Let us send you proof.

Mickelson's Kill-Em-Quick Gopher Poison

has a peculiar odor that attracts gophers. Every atom kills a gopher. That is the reason for the wonderful effectiveness of Kill-Em-Quick. The damage done by 12 gophers will pay for a \$1.25 box of Kill-Em-Quick. Spend \$1.25 and save \$400 in crops. I'll prove it. And I'll also give you many reasons why other progressive farmers use Mickelson's Kill-Em-Quick Gopher Poison—

Better Than Strychnine In Every Way

Strychnine needs lots of water to dissolve it and lots of grain to absorb it. So it is weak and ineffective. And it is excessively bitter. Being bitter and weak, gophers don't eat enough of it to kill them. Kill-Em-Quick is pleasing to the taste of gophers. And it is full strength on each grain. Two poisoned kernels mean death to a gopher. And Kill-Em-Quick is much safer, easier and cleaner for you to handle. No more is used at a time than is actually needed.

Let me send you folders of facts for farmers. Simply drop me a postal at once. But ask your dealer for Kill-Em-Quick the next time you're in town. You can't lose—my guarantee protects you.

Anton Mickelson, President

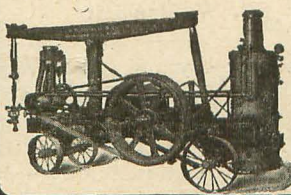
Mickelson Kill-Em-Quick Company

1429 Washington Avenue, No.

Minneapolis, Minnesota



Well Drilling Machinery



You can make big money making wells. This is one of the few lines of work that are not over crowded. The demand for wells is far greater than can be supplied by the machines now at work. Well Drillers command their own prices. We build the celebrated HOWELL line of Well Machinery, for making deep or shallow wells of all sizes, for all purposes and in all kinds of ground. Our machines are the most up-to-date on the market, contain all the latest improvements, are extremely strong and simple, do perfect work, are easily operated and are very FAST WORKERS. Write to-day for our free Catalog A. 6

R. R. HOWELL & CO., Minneapolis, Minn.

Globe Business College

MID-WINTER TERM OPENS JAN. 2nd

Established in 1885. We make a specialty of Bookkeeping, Shorthand, Typewriting, Arithmetic, Commercial Law, Actual Business, Banking, Penmanship, Letter Writing, Spelling, English and Civil Service. Over 800 students annually. 10,000 square feet of floor space; 70 standard typewriters; high-grade, experienced instructors. Graduates placed in positions free of charge. Write for our beautiful 48-page Illustrated Catalog.

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Patronize the NORTH DAKOTA FARMER Advertisers by sending for their literature and then study it. It may save you money. No fakes or frauds admitted to the columns of the N. D. Farmer. Your MONEY'S WORTH on page 2.

School and Home

OUR INSTITUTE FOREVER

Hurrah for the Green and the Gold!
For the boys and girls that make merry,
For the week that has never seemed cold,
And the folks that have never been weary.

Of making life good,
For this promising brood.
That's going to make life cheery.

You see the ribbon is Green
And gay like the hearts that chose it,
And we rejoice to be seen
As part of the State that grows it,
In solid masses,
Of prairie grasses.
And every farm boy knows it.

And the letters that "golden glow,"
Are ornaments that come later,
Wherever the Green doth go,
To every earnest waiter.

These letters grow
And look just so:
B. A.,—the tale comes later.

But who said "sere and yellow"
Was the proper reading of that?"
Some of us ripe and mellow—
And some of us are—fat;
But—young or old,
No heart grows cold,
And life is a joy—not flat.

Not one will forget the men we've met
Nor the women so good, so clever;
Of them we'll tell our English friends
That surely Chas. Kingsley never,
On American maid
His eyes had laid,
When he said, "Be good, not clever;"

For here are both. Just more pure gold
Like the man who is our Leader
For that is what his neighbor said,
Of the man who made this "seeder,"
This Institute,
Both branch and root,
Yes, Randlett is the Feeder.

Just hear him tell, and tell so well—
Not one could tell it better—
What each man does, in making rows
Across our lives grow better.
He calls the roll
Of years filled full—
All true, to the very letter.

He calls the Dean. And he straightway
Brings horse and man and story.
'Tis Bell with birds; 'tis Hoverstad.

Each covers work with glory.
'Tis cows and Martin,
All sure and "sartin,"
And Mac. from Tobermory,

Yes, I forgot to name a lot who gave us
"rurals" pleasure.
What's that you said? "Nuff! Now to bed!
You've broken every measure!"
Well, let me close
With fragrant rose—
Your college's chiefest treasure.

We say you're "Worst," but hold it true
That North Dakota never
Has seen his peer
So watch and cheer
This Institute—FOREVER.
—Jean McNaughton Stevens.

OUR COUNTRY BOYS AND GIRLS

G. W. Randlett

The country boy and girl movement has just been given a tremendous impetus in North Dakota. Of late much has been said and written on the "Back to the Land" question, but it has remained for North Dakota to actually do something of a tangible nature.

For the past five years the Extension Department of the Agricultural College has been conducting contests in corn growing, potato culture, fruit canning, bread making, sewing, etc., among pupils of rural schools thru the office of County Superintendents. During the season of 1910 thirty-two counties joined in this good work where in all some 8,000 boys and girls competed. Many of these grew discouraged as the heat of summer came on. Drouth, hail storms, grasshoppers, roaming cattle, all played a part in drying fond hope from the hearts of many of these country youth. But there were those who endured, who thru persistent, painstaking effort were able to take entries to their local county contests. "To the victors belong the spoils." From these whose products scored highest ninety-five were chosen to be the guests of the Agricultural College for one week. Like Gideon's army they consisted of those "not fearful and afraid." The quick, the alert, the persistent had been chosen from the multitude, the best blood of all the state.

The first North Dakota Boys' and

Girls' Institute proved to be a great life event to the thirty girls and sixty-five boys who had the privilege and honor of being its members as well as charter members of what will surely be a great state organization. It would be indeed difficult to conceive of an equal number of youth getting more of practical instruction, lively enjoyment, and real satisfaction in an equal time. The morning and early afternoon hours were given over to lessons and demonstrations conducted by different members of the College faculty. If instruction of this kind given as this was could be put into our public schools the problem of attendance in the upper grades and high school would be solved, and the great exodus of bright county boys to city and town would soon be a matter of history.

During the latter part of the afternoons and evenings everybody had fun. The main College gymnasium was open to the boys, where every one played in one or more games of in-doorbase ball. At the same time the women's gymnasium in Ceres Hall was occupied by the visiting girls, where various games were enjoyed. The Young Men's and Young Women's Christian Association rooms of the city were also thrown open to members of the Institute and very much appreciated. This with an orchestra rehearsal, a stereoptican entertainment, a visit to the Grand Theater and a trolley ride about the city made up the principal entertainment features. But in reality it was all entertainment; the novelty of the great buildings with their strange fixtures, the laboratories with queer apparatus, the green houses, the aquarium, home of frogs, fishes and snakes, the museum, the wood and iron shops, the barns with their wealth of sleek pure bred animals, the deer park, all contributed to a week crowded full of keenest enjoyment and useful instruction.

Where did they come from, these jolly boys and girls? From the farms in all parts of the state, from twenty-one different counties; from Richland in one corner to Williams in another, from Traill and Walsh and Pembina in the old valley to Billings and Hettinger in the slope country. How did they get there? Not a single one walked, nor did a single one pay his own railway fare. The four railroads of the state furnished free passes to every member, more than 30,000 miles in all.

Not a boy or a girl had any idea of the rare treat in store for him when he left home, but when the Institute proved so good why should it not be made permanent? When the question of organization came up the conductor said "Before appointing a committee on permanent organization I desire to consider carefully for I believe in so doing I am putting into operation one of the most im-

portant educational committees ever named in the state."

It is the plan to increase the membership of the North Dakota Boys' and Girls' Institute for 1911 to two hundred strong, and it is hoped not a county in the state will fail to respond when the roll is called next December.

GOOD ROADS CAUSE MENACED

Those who have devoted much energy and time to promoting the good roads cause, says the Woman's National Daily, have marveled at the lack of co-operation on the part of the farmers who, they think, should manifest the greatest interest in the enterprise. As a general proposition the farmers would be the ones who would derive the first and greatest benefit from a thorough system of good roads. The advantages are too numerous and too manifest to require enumeration. But there is a possibility that the farmers see possible disadvantages which may follow the suggested improvement. From many sections come increasing complaints of the abuses by pleasure-seeking automobilists. In the vicinity of the larger cities the scorcher has made himself a nuisance to his rural neighbor. Good roads have brought no real blessing to the suburban farmer, and the "suburbs" are being extended as the roads are improved and the horse-power of the autos is increased.

This abuse has become so great in the country districts west of St. Louis, for instance, that the farmers have organized to protest against it. The warm summer nights, they complain, are made hideous by the screeching of siren whistles and the shouts of joy riders. Within a week three terrible accidents have occurred in that district, to say nothing of a half-score of minor mishaps.

Why, these farmers may well ask, should they be taxed to build macadamized roadways for this unwelcome traffic? They would prefer to go back to the days of the ox cart, hub deep in mud or fellow deep in dust, than continue to endure the present infliction, to say nothing of inviting a greater visitation.

But the automobile has come to stay. Its value should be as great to the farmer as to the urbanite. This can not be so, however, under present conditions. Sane restrictive measures must be adopted. People, both in the city and out, must be reassured that the automobile is neither a nuisance nor an engine of death. A reasonable speed

limit should be fixed by state law, and enforced. This would cure all the present evils surrounding the traffic. The only inducement to "joy riding" is the unusual and intoxicating speed now permitted. Regulate this and the attendant abuses will disappear. It can be done effectively by making the penalty of the first violation of the law the surrender of the license of the automobile itself, either indefinitely or for not less than one year.

We need better roads, more automobiles and fewer insane chauffeurs and pleasure seekers. There is no good reason why all these needs should not be met. The inspiration for all just law, the desire to do the greatest good to the greatest number, may be made the basis for any reasonable state regulation. The condition has arisen and a way must be found to deal with it intelligently. In working out this process the farmers will have the hearty co-operation of the vast majority of the city people. Their cause is common.

TO REGULATE COLD STORAGE

Another one of Chemist Wiley's hobbies appears about to become a reality and his constant hammering at the deception imposed on the public in the way of cold-stored foods is about to bear fruit. It is expected that a bill for the regulation of foods placed in storage, along the general lines of the pure food law will be reported from the senate committee on manufactures early in the present session.

Following the general outlines of the pure food bill, the storage food bill will probably contain provisions for the branding of foods placed in storage to indicate not only their character, but the length of time they have been kept in storage. There will likely be general provisions against the sale of storage food that is unwholesome and for punishment for misbranding and other violations of its provisions. Another important feature of the bill is expected to be the fixing of a time limit on storage. It is understood, however, that the committee will, in framing the legislation, provide various time limits for specific kinds of foods, it being recognized that some foods can be kept in storage longer than others. Senator Heyburn who had a big hand in shaping the pure food legislation passed in 1906, is in charge of the new measure.

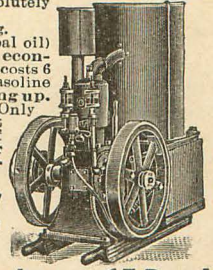
What are we kicking about when we pay 50 cents a dozen for eggs. Ex-Senator Teller recently stated that he recalls the days when fresh eggs cost \$3 a dozen in Colorado. Of course that was long time ago when there was a rush for mining claims in the West.

Cobwebs in the granary are good things. They entrap the moths which produce the weevils.

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and be compelled to pay to your landlord most of your hard-earned profits? Own your own farm. Secure a Free Homestead in Manitoba, Saskatchewan or Alberta, or purchase land in one of these districts and bank a profit of \$10.00 or \$12.00 an acre every year.

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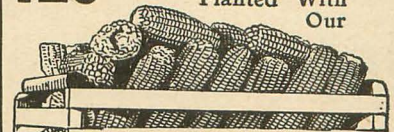
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Seasonable Receipts

At this season dates are cheap and fresh. They are considered one of the most healthful and nutritious fruits.

Date Bread

Make a sponge of 1 quart warm water, $\frac{1}{2}$ a yeast cake, 1 teaspoonful salt and $1\frac{1}{2}$ pint flour. When light add $\frac{1}{2}$ cupful sugar, $\frac{1}{2}$ cupful molasses and two heaping cupfuls chopped dates. Work in enough flour to make a dough. Let rise, mold into loaves and when well risen again, bake three-quarters of an hour.

Date Buns

Roll light bread dough out as for cinnamon rolls. Spread with soft butter, then with chopped dates. Roll and cut into pieces one-half inch thick. Lay them in buttered pan and when light bake in good oven.

Equal parts finely chopped dates and English walnuts moistened with a little sweet cream or soft butter makes a delicious filling for sandwiches.

Chopped dates added to either plain boiled milk frosting or frosting made with the whites of eggs, makes good filling for layer cake.

A cupful of chopped dates added to a plain, cheap cake adds much to it and is more healthful than rich frosting.

Dates should be carefully washed, drained and dried before using.

Sour Cream Cake

1 cupful sugar
1 egg and yolk of another
1 cupful sour cream
 $1\frac{1}{2}$ cupfuls flour
 $\frac{1}{2}$ teaspoonful soda and 1 teaspoonful baking powder. Flavoring.

If you do not wish the one white of egg for frosting, add it to the cake. This is good for either layer or sheet cake.

Eggless Loaf Cake

One and one-half cupful sugar, 1 cupful sour milk, $\frac{1}{2}$ cupful butter, 3 cupfuls sifted flour, 1 cupful chopped raisins, $\frac{1}{2}$ teaspoonful each cinnamon and nutmeg and 1 teaspoonful soda.

Corn Fritters

To 1 cupful of corn (canned) add 1 tablespoonful butter, 1 tablespoonful cream and salt and pepper to taste. Stir in enough flour to hold the mixture together and fry until brown.

Cornmeal Griddle Cakes

Two cupfuls rich buttermilk, $\frac{1}{2}$ teaspoonful salt, 1 level teaspoonful soda, and cornmeal to make almost the consistency of mush. Have griddle hot and oiled. Drop on a spoonful and brown on both sides. When first dropped, flatten out with back of spoon. Tear open and butter. Never use a

knife to open them. If made according to rule they will be light and fluffy—very delicious.

Dried Bean Soup

One pint dried beans, $\frac{1}{2}$ pound ham or dried salt pork. Wash the beans, soak them over night. In the morning drain the water off and cover them with water; add the ham or pork and boil till beans are very tender—usually 3 or 4 hours. Press the beans thru a sieve. Return to soup kettle and bring to boil. Season with salt and pepper.

Pea Soup

Take 1 quart of dried peas; wash thoroly and soak over night. In the morning boil peas in water in which they soaked until very soft (about 3 hours). Pass thru a collander, adding the water gradually—which should be about 4 or 5 quarts. Wash $1\frac{1}{4}$ pounds fat salt pork and let cook tender in another kettle. When done add to peas with the broth and season to taste.

HINTS GATHERED FROM HERE AND THERE

Common Burlap, costing a few cents a yard, may be dyed with old-fashioned red aniline dye and makes beautiful portiers and draperies. No one would ever dream they are not quite expensive as colored burlaps are hard to obtain in so rich a shade.

When planning to send a box to the boy or girl away at school, use a strong splint basket instead. Then jellies and the like may be packed without fear of spilling and the railroad employees will thank you for furnishing something easily handled. Put on plenty of thick paper tied with strong twine.

Many have learned that a tin pan turned over the flat-irons while on the stove will cause them to heat much more quickly. Even better than the pan is a discarded teakettle with the bottom cut out. This gives a handle with which to easily remove the covering when a fresh flat-iron is required.

When uniting pieces of soft wool with screws, if you will remove the screw after having made the hole and put in a little hot glue then replace the screw the parts will never work loose as sometimes happens if subjected to any strain.

Pin-cushions stuffed with coffee grounds, which have been thoroly dried and aired, prevent needles and pins from rusting.

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NORTH DAKOTA FARMER, Lisbon

HOME DRESSMAKING



No. 2432—Ladies' One Piece Dressing Sacque or Combing Jacket. Cut in sizes 32, 36, 40 and 44 inches bust measure. The garment requires $2\frac{3}{4}$ yards 22 inch or $1\frac{1}{2}$ yards 36 inch material for any size, with 10 yards lace, 1 yard insertion, and 4 yards ribbon to trim as illustrated.

Price, 10 cents.

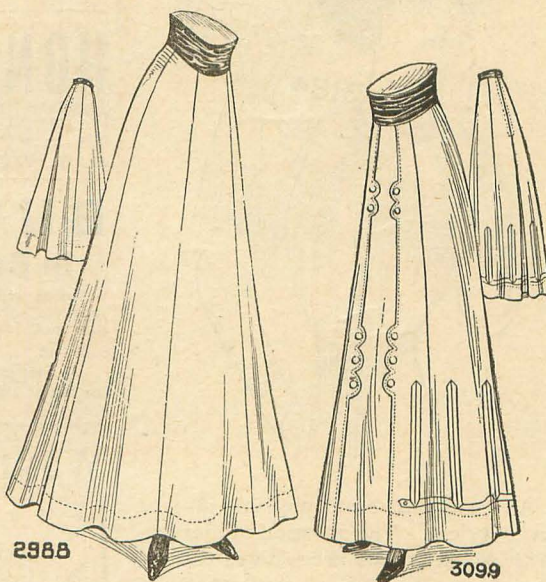
No. 3060—Ladies' Square Yoke Kimona, perforated for shorter length and with flowing sleeves. Sizes 32, 36, 40 and 44 inches bust measure. Size 36 requires $6\frac{1}{2}$ yards 40 inch material. If contrasting material is used for band, $2\frac{1}{2}$ yards 20 inches wide will be required.

Price, 15 cents.

No. 2988—Ladies' Seven Gored Skirt, having inverted plait or habit back. Length in front 43, back 46 inches; perforated for 40 inches front, 43 inches back. Width around lower edge about $3\frac{3}{4}$ yards. Sizes 22, 24, 26, 28, 30, 32 and 34 inches waist measure. Size 26 requires $9\frac{1}{2}$ yards 24 inch material.

Price, 15 cents.

No. 3099—Ladies' Nine Gored Skirt, having inverted plait at center back, and in regulation or shorter length. Length in front 43, back 46 inches; perforated for 40 inches front, 43 inches back. Width around lower edge about $3\frac{3}{4}$ yards. Sizes 22, 24, 26, 28 and 30



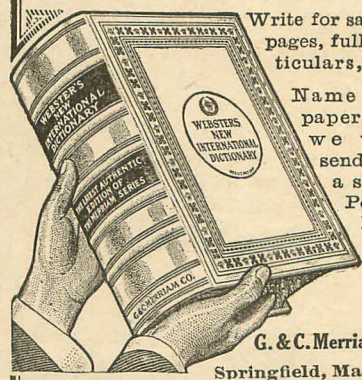
inches waist measure. Size 26 requires 8 yards 27 inch material.

Price, 15 cents.

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No. 3126—Child's Dress, high or low neck and short sleeves. Suitable for embroidered flouncing. Sizes 2, 4, 6, 8 and 10 years. Size 6 requires $3\frac{1}{4}$ yards 36 inch material, with 2 yards insertion. If flouncing is used, size 10 will require $2\frac{1}{2}$ yards 32 inch flouncing and 13 yards 36 inch plain material.

Price, 15 cents.

No. 2987—Misses' Princess Dress or Slip. High neck, perforated for round or square neck, short puff sleeves, or plain two-seamed sleeves, perforated for three-quarter length. Sizes 12, 14 and 16 years. Size 14 requires $8\frac{1}{4}$ yards 27 inch material.

Price, 15 cents.

No. 3184.—Ladies' Yoke Waist. With body lining. Having high or round neck and two-seamed sleeves. Closing to the left of center front. Sizes 32, 34, 36, 38, and 40 inches bust measure. Size 36 requires $2\frac{1}{2}$ yards 36 inch material. Price, 15 cents.

THE NORTH DAKOTA FARMER will supply its readers with perfect fitting seam allowing patterns from exclusive Paris designs—at the given price for each pattern. For ladies upper garments give bust measure, for skirt and under garments waist measure. For misses and children give age and size. All patterns are guaranteed a perfect figure.

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Westland Educator

For 1910-1911

Teachers will be glad to learn that nearly a score of writers are contributing the present school year.

The "W. E." is now the "best ever." Address for clubbing rates

WESTLAND EDUCATOR, LISBON

Elementary Agriculture

McNeal. C. James, Editor

DOMESTIC ANIMALS

Our subjects of study this month are very interesting, and far more important to man. Did you ever stop to think how man would get along if he did not have horses as beasts of burden, or hogs, cattle, and sheep for meat, milk, and clothing? It is stated that ordinary farm work can be done twenty times as cheap by the use of horses as it could be by hand labor. Someone has figured out that a man can, with a five-horse team, plow as much ground in a day as one hundred men could spade in the same time. Some good authorities compute that about forty-five per cent of the food of the better classes of the United States consists of animal products in the way of meats, eggs, and dairy products.

Since domestic animals have such a place in our civilization, it is well that we spend a little time in studying them. One of the most useful and most loved of these animals is the horse. It is not known how long it has been domesticated, neither is its origin known. It is thought that the Israelites knew nothing of the horse until they lived with the Egyptians. The Assyrians used many horses in their cavalry divisions of the army, at an early date. The main breed of horses in this country came from Europe, the road horses from England, and the draft type from the continent and Scotland. In originating these breeds the Arabian horses have been most used.

There are two main types of horses: the draft horse and the roadster. These two are again divided into several others. These two types are very different in general characteristics somewhat as follows:

Draft Horse

General appearance: low, massive, plump.
Neck: short, thick, broad.
Shoulders: more upright
Front feet far apart.
Body round with well-arched ribs.
Legs not so long. Not more than half the height.

Roadster

General appearance high and active.
Neck: long, graceful, thin, and light.
Shoulders: long and more sloping.
Front feet near together.
Body deep up and down.
Legs quite long.

Now if one will notice, he will see that some of these characteristics are opposite in the two types. The two types have very different work to do, so they

have been developed differently. Since some of the characteristics are opposite it is impossible to get a breed which will have the qualities of each, hence there are no good breeds which are good for both purposes. A pure bred horse is always bred for some distinct purposes and possesses those characteristics in his makeup which will best adapt him for his work. A grade or mixed bred horse is not bred for anything definite, so he cannot draw heavy loads as can the draft horse, neither can he trot as the roadster can. Hence the superiority of a pure bred horse over a grade.

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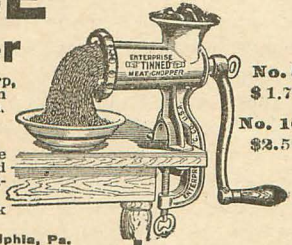
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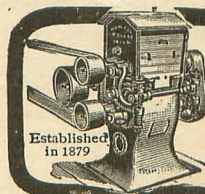
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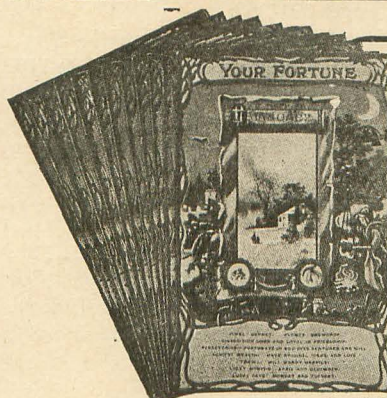


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type is the Percheron breed. It is the favorite draft horse. They are large horses which have been imported into this country from France and are thought to be better than other draft horses in bone, feet and in general style. They are also thought to be more active and intelligent than other draft breeds.

The Percheron horse has been bred and developed in a small county in France for many years until it is a very distinct breed and possesses the characteristics given above for the draft horse in a marked degree.

A good representative of the roadster type is the American trotter. This is an American breed. It has been made under very variable conditions; for this reason it does not have a very definite breed type, but possesses the characteristics named above for the trotter. In order for a horse to be classed as a standard breed trotter he must be able to trot a mile in a certain time, or produce offspring which possess certain speed. These animals have many records of from two minutes, thirty seconds to two minutes per mile.

As much as we would miss the horse if we were deprived of the use of it, we would undoubtedly miss the cow more, because of her milk, butter, and beef.

Cows, like horses can be grouped together into two general types. These are the beef type and the dairy type. There is a less definite third one known as the dual purpose. This type is not well established as yet, and probably never will be. The characteristics of the two main types are so different it is almost impossible to blend them. The following will give some idea of the conformation of the two types:

Dairy

Form: wedge-shaped.
Head: small, long, narrow.
Neck: fine, medium length, thin.
Shoulders: thin, lean, bony.
Back: crooked.
Loin not fleshed.,
Flank: high.
Thighs: thin.
Udder and milk veins large and prominent.

Beef

Rectangular.
Head: Small but thicker.
Neck: short, thick.
Shoulders: heavy, well fleshed, wide between front legs, wide on top back of shoulders.
Back: straight.
Loin: broad, thick fleshy.
Flank: low.
Thighs: full, heavy.
Udder and milk veins: not prominent.

Some of the most important breeds of the beef type are: the Shorthorn, Hereford, and Aberdeen Angus. All these breeds and several others were originated in the British Isles. The Shorthorn

holds the same place in popularity among beef cattle men as does the Percheron horse among draft horsemen. It was originated in the northern part of England some two hundred fifty years ago. This breed was one of the first to be imported into this country, and it is still very popular. These cattle are the largest of the beef breeds, and conform very closely to the ideal of the beef type as given above. This breed was early bred with good milk qualities in view, and for this reason is the best milker of the beef cattle.

A few of the dairy breeds are: the Holstein Friesian, Jersey, and Guernsey. The first is the largest of the dairy type. This breed was originated in Holland. Nothing is known of the early history of the breed, but it is thought that they have been bred there for nearly a thousand years. They were first brought to this country by the Dutch in New York. These cattle are noted for their large milk production. Missouri Chief Josephine, a Holstein cow owned by the Missouri Agricultural College, holds the world's record for a six months' continuous milk production. Her production for this time was 17,008 pounds of milk; an average of 93.4 pounds per day. This is equal to 44 quarts or 11 gallons a day, for 182 consecutive days. This cow is an exception, however. Many cows of this breed produce from 15,000 to 30,000 pounds per year, which is a very good yield. The milk is not rich in butterfat when compared to Jersey milk, but their yearly production of butterfat is large because of the amount of milk they give.

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PAINT NOTES

While there may be no objection to green trimmings, the house that is surrounded by a grove had better not be painted green or olive.

Is there anything more cozy and home-like than a pure white farm house in a cluster of shade trees? It is well to make the trimmings a shade darker than the body of the house, however, there are occasions when a light tint for the

trimmings makes a very good appearance.

Bear in mind that the durability of the paint depends upon the purity of the white lead and the linseed oil. The purchaser of mixed paints must select a manufacturer in whom he has confidence as adulteration in paints may be very easily concealed.

Petroleum is often used as an adulterant and may be detected by placing a few drops of linseed oil upon a black painted surface. A bluish tinge around the edge indicates petroleum. Resin oil and fish oil may be detected by their odor. These days corn oil is used but cannot be detected unless a large quantity has been employed, when the odor is very strong.

Beware of the contractor who uses too much thinner. It is one thing to spread and another to do it properly.

While the hard enamel surface may be very attractive, it is plain that zinc is present, which sooner or later will cause scaling.

The great enemy to woodwork is dampness, for dampness causes the decay of the wood. There is no better protection to the wood than a covering of good paint.

There is no more striking evidence of prosperity than well-painted buildings. Once was the time when paint was considered a luxury, these days it is considered a necessity.

The amount of money spent in repainting the farm machinery is a good investment. It will prevent the decay of the wood and the rust of the iron and steel. Why should not the farmer take pride in driving a well-painted binder?

While it is better to use poor paint than no paint at all, economy demands the best protection for the best materials. Adapt the kind of paint to the character of the work. The kind of paint used for iron work differs from that used for wood, as the latter must be rust resistant.

If you do not owe it to your pocket-book, you certainly owe it to your community that your buildings and machinery bear the stamp of prosperity and thrift. Weather-beaten, dilapidated farm buildings are not very great attractions to the prospective buyer. There may come a time when you would gladly sell the farm if a tempting offer were made.

Having once decided that you will paint your buildings and machinery do not delay the work, waiting for some more opportune time. Every delay means greater difficulty in applying the paint, more decay or rust and greater expense for material to cover old work. Do it early in the spring.



Plan Your Painting Now

Don't you think this a good time to plan your painting? Take a few hours *now*, while your are not busy with outdoor work, and go over the proposition. Judge painting as you would buying a horse--not by the first cost. A wind-broken horse sells cheap and so does a poorly wearing paint.

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tells the truth about Paints and Painting. On pages 55 to 59 you will find an interesting article on "How to Paint." Pages 18 to 26 take up the subject of "When to Paint," and it does not pay to miss the "Truth about Paint," on 59 and the following pages. Every farmer should read this book if he contemplates painting. It will pay you to *plan the work with the assistance of "Paints and Varnishes for the Farm," sent free.* Write for a copy.



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